Reviewer’s report

Title: A mixed methods quality improvement study to implement nurse practitioner roles and improve care for residents in long-term care facilities

Version: 1 Date: 06 Sep 2019

Reviewer: Reviewer 2

Reviewer's report:

PEER REVIEWER ASSESSMENTS:

OBJECTIVE - Full research articles: is there a clear objective that addresses one or several testable research questions? (Brief or other article types: is there a clear objective?)

Yes - there is a clear objective

DESIGN - Is the current approach (including controls and analysis protocols) appropriate for the objective?

No - there are major issues

EXECUTION - Are the experiments and analyses performed with sufficient technical rigor to allow confidence in the results?

No - there are major issues

STATISTICS - Is the use of statistics in the manuscript appropriate?

No - there are issues with the statistics in the study

INTERPRETATION - Is the current interpretation/discussion of the results reasonable and not overstated?

N/A - no results to interpret

OVERALL MANUSCRIPT POTENTIAL - Has the author addressed your concerns sufficiently for you to now recommend the work as a technically sound contribution? If not, can further revisions be made to make the work technically sound?
No - manuscript has some fundamental flaw(s)

PEER REVIEWER COMMENTS:

GENERAL COMMENTS: When receiving this manuscript I was excited about its interesting and actual topic. However after reading it I am disappointed. It is definitively not ready for publication. It has several main shortcomings, both the manuscript as the study itself. The manuscript is too long, with a lot of unnecessary information. They describe both forces and outcome results, and to my opinion these could better described in two articles. One wants to know if after appointing nurse practitioners, this has a positive effect. For this one doesn't need so much information.

Regarding the authors' response to the previous reviewers, they are in general adequate. A few comments about the reactions:

The description of the framework used is still vague. It would be nice if the authors could explain this framework, not only what this framework allows the authors to do, but also how it looks like.

How data accuracy was determined: Several steps are used to receive accuracy of the data. However I miss how you determine the accuracy of the health records itself. It is general known that health records are not accurate, so what did you do to improve them?

Table 1. Put in the title that these are data of the start of the study, and mention that also in the text.

Discussion section: I didn't see the first version, but normally one starts with the main results of the study and then discuss them. The first reviewers asked you to delete the main results. So I am confused about this, and leave it to the editor.

The first reviewer asked about other changes that may have influenced the results. You discuss the changes made after the results were known, but the reviewer wants to know which changes influenced the results itself.

REQUESTED REVISIONS:

It is not clear why the authors want to study the appointment of nurse practitioners, because they say themselves that we know already that appointing nurse practitioners has a positive effects on the quality of care. By the way, I don't like the term implementation in this regard. You don't implement a nurse practitioner, you appoint one.

They use a prospective cohort study. However as you can see in the figures most results are after the first month. The incidence is calculated per month, which is alright, but the incidence of the first month they is calculated differently. If someone has a pressure ulcer developed before the
start of the project they take this PU into the first month (as I read it in the right way). Of course one has than much higher incidence than in the next month. Furthermore the figures show that the differences found are mostly based one or two sites. The others don't change. More information which can explain these differences would be helpful. So I am not convinced of the positive effects of the Unclear is also were the nurse practitioners came from. Did they work already in the different sites, or were they new in those sites? If they worked already in the sites what is than the difference.

**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.

No

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

Unable to assess

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

**Declaration of competing interests**
Please complete a declaration of competing interests, considering the following questions:

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2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?
3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

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If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

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