Reviewer's report

Title: Variations in levels of care between nursing home patients in a public health care system

Version: 1 Date: 10 November 2013

Reviewer: Anders Wimo

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Major Compulsory Revisions

1. Restriction: “To avoid confusing different levels of care with different prioritization between local authorities we have limited our analyses to nursing homes in one municipality; the city of Trondheim with 180,000 inhabitants” is in a way justified for logistic reasons, but then one of the key determinants (explanation factors) may be missed. This should be developed more in the discussion.

2. Another missing factor is the availability of nursing home beds in the area and to what extent this may influence the results (as for example: the number of beds per 1000 persons 80+ in an area). In a country there may be a very big variation of available nursing home beds. To what extent is the area representative of e.g. Norway

3. Staff skill mix is characterized by two variables; the proportion of employees with health related college/university degree and the proportion of employees with a health related upper secondary education.

   This means that is there is no quantified staff ratio (or similar, showing the number of staff in relation to the number of residents) for the different nursing homes (for example the number of aides per resident around the clock), which is a great disadvantage since used care time depends on the available resources at different settings.

   Or…?? In the result section I read this: “Direct care constituted about 60 percent of the available staff hours” meaning that there is information on the number of staff issue?? On the individual nursing home level?

4. p 12, top: “A more resource demanding case mix on nursing home level seems to decrease the amount of individual care given. A tenth of a unit increase in the average nursing home ADL-score decreases the average amount of direct individual care for patients with about three percent. “

   This seems strange, shouldn’t it be the opposite unless the number of staff is so limited that there is no space for increase in care time when needed (resulting in this paradoxal result)?? On the hand 40% of care time seems to be for something else not captured in this study. Please clarify.
5. The comments of the results of model 3 in table 3 are rather detailed and somewhat confusing (and over interpreted in my view, it is many ups and downs which does not seems to be logical from a clinical viewpoint). How do the percent comments in the text correspond to the figures in the columns of table 3 (and model 3)?

Example 1: text: “For the average patient the marginal effect of one point increase in ADL was 27 percent”. Where can I find that in table 3? 1-0.73= 0.27??

Example 2: text: Those with dementia/Alzheimer and stroke got respectively 7 and 9 percent more personal care. Those with stroke got 10 percent less assistance with meals.

In table 3 under model 3 I can read under column personal care for dementia/Alzheimer and stroke respectively: 0.06 and 0.09 (6 and 9%?) and meals for stroke: 0.10 (10%?).

Please clarify.

Minor Essential Revisions
1. Please clarify the rationale for a cut off of 3 hours/week for informal care
2. Factor analysis should be as an appendix in the net version and not as a request.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
'I declare that I have no competing interests'