Reviewer's report

Title: Does the introduction of an intermediate care hospital in a municipality influence health care utilization among elderly patients? A retrospective comparative cohort study

Version: 1
Date: 16 October 2014

Reviewer: Matti Mäkelä

Reviewer's report:

The title question, “Does the introduction of an intermediate care hospital in a municipality influence health care utilization among elderly patients?” is a valid and interesting question, and the data used by the authors are appropriate to approach the question.

The authors compare two communities, one that has implemented an interesting intervention and another that hasn’t. The setting is a “natural experiment”, with all the limitations of such a setting. Certain items should be better described. See numbered comments.

Major compulsory revisions

1. how was the length of stay in the ICH handled: was it a part of the “index hospitalization” LOS, and was it part of the accumulated hospitalization during follow-up?

2. It is unclear what exactly is included in the outcome measure “hour-based use of primary care services”. If the care in the ICH was considered part of this outcome measure, it skews the whole issue: a cost-shift of care days from the hospital to ICH should not be reported as a desired result. Also, it is unclear how the authors handled the study subjects who had no “hour-based use of primary care services”. This is especially relevant, as one of the determinants (functional status) was only available for patients who did.

3. how were deaths among the study cohorts (during the follow-up year) handled? how did they reflect on the outcome measurements?

4. what basis was there for the imputations of missing ADL scores? It is reasonable to suspect that a missing ADL score might be correlated with the health state of a person, and the proportion of patients with such a missing score is not negligible, and possibly different between the study groups.

5. It is unclear what exactly the procedure for the ANCOVA analyses was, how the authors decided on the covariates to be used, and what the effects of the covariates in the final models were.

6. It is unclear why, in all the tables and figures, the data are reported separately for each year, but the year is not included in the ANCOVA analyses. Also, the
presentation of the results separately for each year confuses the reader. Either there is a time effect (such as the decrease in average LOS), in which case time should be a (possibly categorical) covariate, or there is none, in which case no adjustment for time is needed. And in both cases, a pooled analysis would keep the message clearer.

7. The article is lengthy and includes large amounts of irrelevant data, especially the demographics in Table 1. This information is not used in the analyses, and does not add to the questions asked. Suggest deletion.

Discretionary Revisions

8. The issue of unwanted effects of the ICH is only discussed in relation to mortality, readmissions and primary care use. As the actual survival of the study subjects was not analyzed, mortality is a substitute, but not a very good one. The rationale for choosing only these unwanted effects for discussion should be specified.

9. The differences between the ICHM and CM in the functional status and long-term care is reported but not discussed. There is no discussion on whether the differences observed in the study (e.g. in the amount of primary care) is related to the population-level differences reported in Figure 4. I suggest a clarification of this issue in the discussion.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests