Reviewer’s report

Title: How Are Medical Groups Identified as High-Performing? The Effect of Different Approaches to Classification of Performance

Version: 0 Date: 01 Feb 2019

Reviewer: Reviewer 2

Reviewer's report:

PEER REVIEWER ASSESSMENTS:

OBJECTIVE - Full research articles: is there a clear objective that addresses a testable research question(s) (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?
Yes - the approach is appropriate

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

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?
Yes - the author's interpretation is reasonable

OVERALL MANUSCRIPT POTENTIAL - Is the current version of this work technically sound? If not, can revisions be made to make the work technically sound?
Yes - current version is technically sound
GENERAL COMMENTS: The study addresses a relevant topic and is overall sound. However, I would recommend the use of statistics in addition to the descriptive presentation of classifications.

REQUESTED REVISIONS: This is a methodological study of different ways for assessing overall performance of healthcare providers. The topic is not new but remains relevant, because performance measurement has substantial consequences for healthcare providers and the healthcare system. The specific focus concerns the selection of providers, which perform highly across all domains. Data relate to performance measures in four domains and 58 large providers in one state of the United States. The methodological approach is straightforward and largely descriptive. The presented findings are plausible and consistent with other studies, as far as I am aware, but I can obviously not check the calculations.

While the study seems sound, I wondered whether a probabilistic approach (thus the use of statistics) would be needed to explore the role of chance. Differences between the results of various categorization approaches are partly related to 'chance', a concept that covers measurement error, estimation error, and random fluctuations in reality. Thus, I would recommend to involve a statistical advisor in the project. (The issue is somewhat similar in education research of passing/failing exams, which does use statistical methods.)

Other comments:

-Background (p.4): The introduction (as well as discussion) is heavily orientated on the United States and market-type healthcare systems. The paper would improve if a broader international perspective would be taken. Methodological questions regarding performance are also relevant in healthcare systems, which do not have such strong market-type of competition (e.g. the National Health Service in the UK).

-Provider performance is a very broad, multi-domain concept and any set of measures has limitations. Particularly the measurement of quality (p.6, l.125) is fairly limited and focused on population management rather than individual medical care.

-Selection of 58 out of 240 providers (p.7, l.138) may have led to selection bias. This is reasonably well explored (also on p.7).

-Data-analysis (p.8-9): it would be relevant to report if the analyses were pre-specified or iteratively developed during the study. Also, were many more analyses done and not presented?

-Results (p.10). It would relevant to present more information on the provider groups and the database of the performance measures. Currently, it is unclear how many data per provider were available for the performance measurement.
Discussion (p.12). It would relevant to discuss the issue of meaningful aggregation level. Even a single hospital can be highly heterogeneous in terms of performance (some departments may perform much better than others).

ADDITIONAL REQUESTS/SUGGESTIONS: No, see my review above.

Note: This reviewer report can be downloaded - see attached pdf file.

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?
If not, please explain in your comments to the authors.

Yes

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
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No