Reviewer’s report

Title: Validating surgical procedure codes for inflammatory bowel disease in the Swedish National Patient Register

Version: 1 Date: 05 Apr 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 minor issues

EXECUTION - Are the experiments and analyses performed with sufficient technical rigor to allow confidence in the results?
No - there are minor issues

STATISTICS - Is the use of statistics in the manuscript appropriate?
Yes - appropriate statistical analyses have been used in the study

INTERPRETATION - Is the current interpretation/discussion of the results reasonable and not overstated?
No - there are minor issues

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?
Probably - with minor revisions

PEER REVIEWER COMMENTS:

GENERAL COMMENTS: Have the authors responded adequately to each of the questions you raised in your comments?
I am very sorry but either I am off base or the authors did not understand many of my questions. I have read their methodology several times and I am still not certain if they reviewed ONLY the medical records for 2 years before and at least 2 years after the index date of the diagnosis. A statement saying
that after this index diagnosis, the medical records were then reviewed up until 2014 or until the death of the patient would clarify this misunderstanding if indeed that is what they did.
Second the explanation for excluding the 4 patients does not satisfy me. These patients in my opinion should be included as not satisfying the confirmation of the procedure code; inclusion of these 4 patients will decrease the accuracy of the medical records but only marginally--sorry but they need to be included for full transparency--when I read their explanation, it seems like they are trying to hide these 4 medical records.

Have they made the appropriate changes in the manuscript
Honestly, the authors have NOT clarified or amended the text to answer my question concerning for how long (over how many years) they reviewed the patients' charts after the index diagnosis
Second cc code JAA00 - this code is for "incision in the abdominal wall" As a surgeon I have no idea what this means unless it is to open a wound for drainage of infection " their response that they have "validated " it is meaningless to me and they have not apparently looked for operations related to complications of operative intervention for IBD- small bowel obstruction, hernia in the incision or around the stoma, etc

What is your overall impression of the revised manuscript
While the concept of the study is good and laudable to allow population. AAES studies on IND-and important and I get the big picture, I remain uncertain of for how long the charts were actually reviewed after the index diagnosis specifically if a patient had an index operation in say 1970, does this mean that the charts were reviewed from 1968 through 1972 or rather from 1968 until 2014 or until death prior to 2014?

REQUESTED REVISIONS:
Are there any additional edits the authors should make?
1. Line 58 better specify the type of code you are referring to
2. Line 55 shouldn't you explain that these 262 patients were "randomly selected form the NPR" ?
3. I still maintain that the 4 charts that you excluded should at least be mentioned and included as worse case scenario or at the very least identified such that your sensitivity could be lessened by these 4 patients.
4. Line 134. When you say "at least" does this mean that if the charts were available from say 1987 to 2014 that you reviewed all the years to see if in all those years the patient may have had an operation but there was no code? Or does it mean that you only reviewed the subsequent 2 years after the index diagnosis if the hospital only gave you the notes for 2 years after the index diagnosis? I am very sorry but I am still having problems understanding just what you did!
5. Lines 237-241 this is not at all clear why not include calculate the false negative predictive values? What are you trying to "hide" because that is how this comes across to this reviewer. The concordance is good so why not present the worse case scenario it will not detract from your results?
6. Lines 245-247 why did you calculate this variable? How is it important in your thesis and aim of the study?
7. Lines 273 and 274 it would clarify the understanding of you said that you reviewed the charts of 262 randomly selected patients with IBD over the time period 1966-2014--this way the reader will now of you looked at all the inclusive years up until 2014 in these patients after their initial diagnosis of IBD
8. Line 303 it would help to say Falkeborn validated codes "for gynaecological operations" and Lagergren and Derogar "for oesophaegeal operations" to clarify that these studies were not in IBD
9. When you say "Surgical notes" do you mean a formal operative note or operative "dictation" describing the operation (this is what surgeons refer to when they want to see what a surgeon actually did at the time of the operation--most such operative notes are a separate part of the medical record and not embedded in the daily progress notes), or do you mean a note in the chart embedded in a progress note that mentioned an operation? Most surgeons refer to operative notes or operative dictations as the formal report of the operation describing in depth the operation, how it was done, and the findings. Is this what you mean? Be clear

10. In table 1 you mention mean patient chart coverage in days. Why not mention mean number of years of individual patient coverage?

ADDITIONAL REQUESTS/SUGGESTIONS:
See above.

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

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

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

**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.

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

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

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

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?
4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

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.

This reviewer has been recruited by a partner organization, Research Square. Reviewers with declared or apparent competing interests are not utilized for these reviews. This reviewer has agreed to publication of their comments online under a Creative Commons Attribution License attributed to Research Square and was paid a small honorarium for completing the review within a specified timeframe. Honoraria for reviews such as this are paid regardless of the reviewer recommendation.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

Do you want to get recognition for reviewing this manuscript? Add a record of this review to Publons to track and showcase your reviewing expertise across the world’s journals. Signing up is quick, easy and free!