Author’s response to reviews

Title: Clinical action measures improve the reliability of feedback on quality of care in diabetes centres: a retrospective cohort study.

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Version: 2
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Author’s response to reviews: see over
Author's covering letter for initial submission

Title: Clinical action measures improve the reliability of feedback on quality of care in diabetes centres: a retrospective cohort study.

Authors:

Version: 1 Date: 16 June 2015

Comments: see over
Dear Editor, Dear Chr. Morrey,

I am pleased to re-submit our manuscript ‘Clinical action measures improve the reliability of feedback on quality of care in diabetes centres: a retrospective cohort study.’ for consideration of publication in BMC Health Services Research. Original submission number: MS: 1077043135144667.

As we were unable to revise the manuscript in the time period given, we were asked to re-submit this manuscript accompanied with a description of changes made. Below there’s a detailed description of the changes made, as well as the responses to the reviewers’ comments.

The work reports on scoring the quality of care in diabetes centres, and how a centre’s rank is influenced when not only credit is given to a good intermediate outcome, but also to an appropriate clinical action. Our results confirm that judging the quality of care based on an intermediate outcome only might be misleading, and that judging quality of care of a diabetes centre based on a more clinically relevant measure that gives credit to both a good intermediate outcome and an appropriate clinical action upon a poor intermediate outcome is fairer.

The novelty of this work, is that we used rather low complexity data elements available from a Belgian quality improvement initiative without an additional data collection burden, making the concept applicable to the on-going initiative reporting on the quality of care given to more than 120 000 patients treated in more than 100 diabetes centres in Belgian.

All authors declare that the manuscript, or part of it, has neither been published nor is currently under consideration for publication by any other journal.

All authors have read and approved the manuscript and have approved its submission to your Journal.

The authors declare that they have no competing interests.
I hope you still share our enthusiasm and consider this work for publication in BMC Health Services Research.

Sincerely,

Astrid Lavens
Changes made and responses to reviewers:

Response to reviewer 1:

The authors compared the value and validity of the clinical action measure about LDL-C, non-HDL cholesterol and blood pressure with those of traditional measure. Although clinical action measure is more suitable for traditional measure, readers may not understand how this study showed the superiority of the clinical action measure over the traditional measure. The structure of the manuscript is disorganized in several parts and the storyline is difficult to follow. There are also many writing errors

- Major Compulsory Revisions
1. (page 3, line 57) The authors mentioned that a disadvantage of the TM is that it is dichotomous. they used CAMs in this manuscript as dichotomous variable. The authors should mention in the limitation section that their CAMs did not overcome the disadvantage of TM with regard to it dichotomousness.

We agree with the reviewer that the CAM is still dichotomous (in terms of ‘0 – not passed criteria of good quality of care’ or ‘1 – passed criteria of good quality of care’). However, it was not our purpose to overcome this. We do not see this dichotomousness in terms of 0-1 as a disadvantage of a quality indicator. In fact, many new quality indicators remain dichotomous (in terms of 0-1), but take patients context and context of care into account in order to improve the reliability of the quality of care measured compared to the quality of care measured using a classical TM. Such a new quality indicator is the CAM. To respond to the reviewers comment, we’ve removed the word ‘dichotomous’ at line 57, and mentioned that the CAM is the TM extended with patient characteristics and appropriateness of care (line 65) in order to improve the classical TM.

2. (page 5, line 100) Please mention if the sampling of 10% patients was randomly performed or not. If not, please mention the sampling scheme in detail.

Done, see line 101.

3. (page 8, line 170) In the Statistical Analysis section, they did not mention all the analyses they reported in the Result section. Because of this, readers cannot catch up with the discussion.

Done. More details are given now, see line 175.

4. Please show how many or what percentages of TMs were different from CAMs. From the funnel plots, we cannot see big differences.

The results section ‘Provider profiling according to the threshold measure and the clinical action measure’ mentions the changes (in numbers of centres, as well as percentages) between the TM and CAM funnel plots, see line 259.

We did not look at the change in the individual score of centres as such, but at their position related to the other centres, namely ‘excellent, good or bad performer’ as this is the goal of assessing quality of care and benchmarking feedback in order to improve the quality of care in centres. However, in the discussion section (line 328), we briefly mention that the CAM will always lead to an equal or higher score than the TM.

- Minor Essential Revisions
1. (page 3, line 49) toimprove -> to improve

Done, see line 48.

2. (page 6, lines 129-130) These sentences have grammatical errors.

Adapted

3. (page 6, line 118-120) The information about blood pressure should go to the last of this paragraph.

Done, see line 143.

4. (page 9, lines 190-192) This information should go to Method section.

Done, see line 148.

- Discretionary Revisions

1. (Additional file 2) Because the authors show the missing proportion of each variable here, the title of the table should be missing proportion of ..., rather than completeness of ... .

Done

2. (Additional file 2, the lowest row) The ranges of 0-100 are not informative. Interquartile range may be more informative.

Agree, done

Response to reviewer 2

Major Compulsory Revisions: none

Minor essential revisions: none

Discretionary revisions:

1. This is a straightforward article investigating the use of clinical action measures (CAM) as a replacement for threshold measures in assessing institutional quality of care of diabetics receiving insulin, particularly with regard to control of non-HDL cholesterol and blood pressure. The authors find that, based on appropriately constructed funnel plots, CAM scores improve upon TM scores by taking appropriate clinical action at an action threshold into account. I have one question for the authors: what is the implication of requiring that the same patient be present both in the 2009 and 2011 snapshots of institutional data? Suppose that a patient was present in the 2009 snapshot but died of diabetes-related causes prior to the 2011 snapshot? How would this affect the findings?

First, our study is a retrospective study. We start from the 2011 value (see methods section line 134, and discussed in the discussion section, starting at line 378). We added the 2009 records of those patients as we need two measurements to be able to compare changes in treatment. Patients that had no record in 2011 because they died between 2009 and 2011, are not taken into account. Also our data collections in 2009 and 2011 are retrospective: we ask the centers to provide us the most
recent values of the patients, which indicates outcomes and care given in a defined measuring period before the two months of data collection (see methods, section study population and cohort construction).

However, if we would collect our data prospectively or – more likely in our IQED study design - if we could collect more values within the same data collection (see discussion, last paragraph, line 398), one intermediate outcome followed by death during the measurement period can be taken into account. The patient characteristics and appropriateness of care that will define whether this evolution accounts for a positive or negative score are to be determined.

2. There are a very few typos (e.g., ‘aimingto’ in the Background, para. 1; ‘cohorts. did not clinically meaningful’ in the Methods para. 3) and words that are possibly the wrong word (‘when taken’ should be ‘when taking’? Methods, para. 4).

Done

**Editorial Request**

**Ethics statement**

Experimental research that is reported in the manuscript must have been performed with the approval of an appropriate ethics committee. Research carried out on humans must be in compliance with the Helsinki Declaration ([http://www.wma.net/en/30publications/10policies/b3/index.html](http://www.wma.net/en/30publications/10policies/b3/index.html)). A statement to this effect must appear in the Methods section of the manuscript, including the name of the body which gave approval, with a reference number where appropriate.

**According to Belgian legislation, it is not strictly necessary for purely observational studies in which no additional data elements are captured except those already present in medical records, to have an approval of an ethical committee. Therefore we did not request this approval for our study. However, we have the approval of the Belgian privacy commission for the use and analyses of these medical data (see url added line 107). In addition, the privacy commission confirmed that there is no approval needed by an ethical committee.**