Reviewer's report

Title: Outcome measures for oral health based on clinical assessments and claims data.
Feasibility evaluation in practice

Version: 0 Date: 07 Mar 2017

Reviewer: Hermann Agis

Reviewer's report:

In their study entitled "Oral healthcare outcome measures for children, adolescents and adults. A proof of practice study" the authors established measures to evaluate oral health. The performance was evaluated based on insurance company data and general dental practices data. Based on their search and evaluation they established eight measures. The authors conclude that 'restoration free time', 'distribution risk categories dental caries', 'filled and missing score' and 'retreatment after restoration' are feasible to describe the oral health status. While the study is interesting with regard to the public health area and the insurance sector there are several issues that need to be resolved and thus major revision is required.

Major Issues:

1) While the study is indeed important for the public health and the insurance sector. The scientific impact of the study is not totally clear. The study was conducted in the Netherlands and it is known that there are big differences in the healthcare and reporting systems within Europe and beyond. It remains unclear if and how these findings translate to an international community. For example can is this approach applicable for USA, Switzerland, Germany, and Australia or are does every system need to establish a distinct approach?

2) How can this approach be used in a scientific setting to improve the quality of clinical studies? What are the limitations and what further research has to be done?

3) It is not clear how that 'restoration free time', 'distribution risk categories dental caries', 'filled and missing score' and 'retreatment after restoration' can be used as quality scores? Is it mainly influenced by the patient's behavior, the DMD's approach to prevention and treatment, or the socioeconomically background of the patient?
4) Overall the approach is descriptive and it remains unclear how to improve and fine tune the system based on these measures. Furthermore, the clinical situation of these criteria cannot be improved retrospectively. Even if a patient has received fillings and was subjected to retreatment after restoration the oral health associated live quality can improve by education of the patients by the DMD and behavioral changes preventing further fillings, extractions and other treatments. How is this reflected in the model?

5) Measures can induce a behavioral change to improve based on the outcomes of these measures. When including these measures to assess the treatment quality is there a possibility of inducting the selection bios for DMD with regard to their patients? Would it encourage treatment approaches in a direction that improve the measures rather than the oral health associated life quality? Or would it be a counterpart to the mentioned treatment bios which is introduced by the "fee per item" approach.

Minor issues:

1) The title should be changed in "Oral healthcare outcome measures for children, adolescents and adults in the Netherlands - A proof of practice study" and the entire manuscript should be clearly revised to reflect this.

2) The authors should revise the manuscript with the help of a scientifically trained native speaker?

3) The way of data presentation should be refined. 9 Tables is quite intense for the reader.
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.

Unable to assess

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 recommend additional statistical review

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Needs some language corrections before being published

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