Reviewer's report

Title: Coding of procedures documented by general practitioners in Swedish primary care - an explorative study using two procedure coding systems

Version: 1 Date: 27 July 2011

Reviewer: Zoe Morrison

Reviewer's report:

This paper is interesting and relevant to current thinking on the coding of medical records, an issue which is increasingly important given the introduction of electronic health records and associated technology infrastructures.

I would recommend this paper for publication subject to the amendments and revisions noted below. In particular I would draw the authors' attention to the need to provide sufficient information as to methods deployed that a study might be replicated. This is the overarching principle informing the major revisions suggested below.

Major Compulsory Revisions

1. The objectives presented for the study should be more clearly stated. They seem to comprise three elements: description of the procedures documented, analysis of how the procedure content/ descriptions within the records map to the two selected terminologies, and comparison between the two terminology systems. The scope of these objectives should also be clarified: the study is described in the title as an explorative study. This should be clear in the objectives and linked to an overarching aim e.g. to indicate areas for future research and investigation/ toinform practice/ policy etc..

2. The description of method is insufficent in two key dimensions. Firstly, it is not clear why only 200 records were sampled from a dataset of 11,000,000. It is also not clear why the year 2005 was selected. This may have been because it was the most recent full year of data but this is not explained. Secondly, the method of analysis is not sufficiently detailed. It is not clear whether this work was done manually or computer-assisted. In the authors' contributions there is a mention of algorithms used in the analysis but this is not mentioned in the text and further information is not provided. To this end the study is not replicable and therefore cannot be published unless these points are addressed.

3. The information on terminology systems (or ontologies) is insufficiently developed. There is a paragraph describing different generations of terminology systems but this matter is not further referred to in the paper, therefore there is an issue of relevance. Does it matter that KVA and SNOWMED CT are from different generations and therefore displayed different characteristics? This should be further developed. A box detailing the characteristics, together with examples, of the generations described would assit the reader.
Discretionary Revisions

4. The paper does not address the international dimensions of this debate, for example the planned migration of all systems in the UK to SNOWMED-CT re-inforces the value of considerations of this coding framework.

5. The term "terminology binding" (p.17) should be clarified with examples. this term is referred to in the conclusion and should be explained fully.

6. IT solutions are described for end user support. Skills development and training offer complementary support to IT assisted mechanisms and should be considered in relation to this issue.

7. In the discussion there is a lack of consideration of the importance of coded data in research, for example in epidemiology. This type of secondary useage adds significantly to the case for coded data within EHRs and I would suggest the authors' draw on this to support their case for further studies.

This is an interesting paper in an under researched area and I would encourage the authors to re-submit their work to this journal taking.

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.