Reviewer's report

Title: A Systematic Review of the Implementation and Impact of Asthma Protocols

Version: 1 Date: 7 October 2013

Reviewer: Knut Magne Augestad

Reviewer's report:

I miss a reference to The PRISMA statements for comprehensive reviews and whether or not the authors have followed these guidelines when performing the review.

The use of the data from the Kawamoto et al BMJ 2005 review may be misleading. That study and others like it (eg, the Garg et al jama one and more recent BMJ 2013 one from same group) looked at the odds of a “positive result” as a dichotomous outcome. The actual effect sizes of implementing guidelines/decision support may be very small. Another approach to reviewing this literature (Effect of point-of-care computer reminders on physician behaviour: a systematic review. CMAJ. 2010) the median effect from CDS was 4, meaning that whatever behaviour was being targeted, the absolute improvement in the % of patients who received the targeted process of care was only 4%. Only a minority of study reported larger effects (18% or higher). At least this should be discussed as a limitation in the paper.

Table 1 is over flooded with information, and does not provide a summary of the identified trials. The trials is simply listed in alphabetical order, and no summary whatsoever is provided. The table needs to be rewritten, and data merged to provide meaningful information for the reader.

Similarly for table 2 and 3: only absolute numbers are provided and it is difficult for the reader to make any conclusions. Some percentages must be provided and the authors must discuss whether some stats are needed.

I miss a more detailed discussion about the obstacles of performing this type of research. Research on clinical decision support (CDS) tools has rapidly evolved in the last decade. CDS provides clinicians with patient specific assessment or guidelines to aid clinical decision making and improve quality of care and patient outcome. CDS has been shown to improve prescribing practices, reduce serious medication errors, enhance delivery of preventive care services, and improve guidelines adherence, and likely results in lasting improvements in clinical practice. However, clinical research on CDS tools faces various methodological problems and is challenging to implement in the field of health informatics.

The authors state that “The double-blinded randomized controlled trial is considered the gold-standard for study design but it is difficult to implement any...
kind of reminder system that could be effectively blinded and randomized “. This statement needs to be clarified and further debated. In a recent paper (Augestad et al Standards for reporting randomized controlled trials in medical informatics: a systematic review of CONSORT adherence in RCTs on clinical decision support, JAMIA 2011) these challenges are addressed. What is the best research method to assess a successful guideline implementation? Although not the main task of the review, these obstacles should be addressed.

Important references to systematic reviews of clinical decision support are missing. These reviews must be discussed and differences from your own conclusions identified.

In conclusion, the tables needs to be improved to provide some meaningful information for the reader. In addition, there exist central reviews of clinical decision support systems that are not cited nor discussed.

**Level of interest:** An article of importance in its field

**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