Author's response to reviews

Title: Factors influencing the implementation of clinical guidelines for health care professionals: a meta-review

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Author's response to reviews: see over
Re: MS: 1266495221172535
Factors influencing the implementation of clinical guidelines for health care professionals: a meta-review

Dear Editor

Thank you again for the useful comments on our manuscript concerning a meta-review about influencing factors in guideline implementation.

Following your advise, we now would like to submit our revised manuscript to BMC Medical Informatics and Decision Making.

In the sections below we will describe how we have revised the manuscript according to the referees’ comments.

Sincerely,

Dr. Patriek Mistiaen and dr. Anneke Francke

Reactions on the report of J. Burgers (Referee 1)

- The referee asked to pay more attention to the practical impact of the findings. What would we recommend to guideline developers and implementers? In the new version, we pay more explicit attention to further steps needed, particularly for guideline developers, implementers and researchers (see Conclusion section)

- The referee states that language, style and content should be improved. We made the following improvements in the manuscript:
  * The manuscript has been corrected by a native translator.
  * We now use the term evidence-based medicine instead of evidence-based care and linked the reference of Sackett et al. (1996) to this definition.
  * We now pay more attention in the Introduction section to key papers of EBM, and also refer to essential papers on guidelines (e.g. Feder et al., Woolf et al in the BMJ serie in 1999, Grol & Grimshaw 2003), as well as some papers of the HRPS serie.
  * We do not use anymore links to websites without any further explanation.
  * We do not refer anymore to the (lack of) implementation of guidelines on palliative sedation, since this concerns a controversial topic.
  * We avoid the term 'exception' or replace it by more appropriate terms.

- The referee also advised to replace the word 'environment' by 'context' or 'context of healthcare services'.
We did not follow this advise since in the widely used classification on factors influencing guideline implementation of Cabana et al. (1999) also the terms “environment” and “environmental factors” are used.

- The referee advised to present a table with general characteristics of the reviews. Table 5 displays such information on, for instance, topic, target group and methodological characteristics of the reviews included.

- The referee asked what we mean with “we conducted a manual search in reference lists of selected articles”.
  We mean a manual search in the papers of which we read the full text (in step 2 of the inclusion process). This is more clearly formulated in the new version.

- The referee asked how consensus based guidelines were defined. In the new version we define consensus based guidelines more explicitly as “guidelines that are developed exclusively on the basis of consensus procedures, without a systematic analysis of relevant scientific literature”.
  We want to emphasize that we did not exclude papers for reasons that they described guidelines using consensus-based knowledge, but for reasons that they exclusively focussed on consensus procedures or consensus based guidelines.

- The referee asked for a more clear and explicit distinction between characteristics of guidelines and characteristics of implementation strategies.
  We followed this advice, as can be seen in the Results section and Table 5.

- The referee requested more information on overlap (or the lack of overlap) between studies included in the reviews.
  We pay attention to this point in the Results and Conclusion sections of the new version.

- The referee asked for more information on the characteristics of the guidelines.
  This information is provided in Table 5, left column.

- More explicit conclusions and more recent literature have to be provided in the Conclusion and Discussion section.
  Following the advice of the reviewer, in the Conclusion section now attention is being paid to the practical implications of the findings for different target groups (guideline developers, guideline implementers, policy makers, and researchers).
  The literature referred to in the Conclusion section is also expanded.

- The referee advised to improve the readability of Table 5 by presenting the different variables in different columns.
  In our opinion presenting additional columns would make the readability not much better. However, we improved the readability by now using the “landscape format” for table 5. In addition, we improved readability by adding some “sub-headings” within columns.
Reactions on the comments of G. Barosi (Referee 2)

- This referee has main remarks about the data synthesis and especially about the lack of quantitative pooling.

Currently no well developed methodology exists on how to synthesize or pool in a quantitative way results of systematic reviews. Moreover, even if such methodology would have existed, we wouldn’t have had numbers, e.g. in the form of effect sizes, to pool, since most reviews did not contain such numbers. Moreover, due to the large heterogeneity in primary studies included in the reviews and the large heterogeneity between reviews, it wouldn’t have been appropriate to try to synthesize in a quantitative manner. So, synthesizing the included reviews in a descriptive manner appeared to us the most appropriate way.

- The referee pointed to the fact that the results of the 11 reviews are sometimes discrepant and advised that the meta-review should also pay attention to heterogeneity among studies. In the Results section and the Conclusion section we now pay more explicit attention to the limited overlap in the focus of the reviews (particularly regarding guideline topics and guideline target groups). In the Conclusion section we also discuss whether this may be an explanation of the sometimes contradictory results.

- The referee wrote that “the quality of the reviews is said to be taken into account, but the way in which this was done was not explicitly stated. In both the Results section and Conclusion section we discuss findings in relation to their methodological scores on the methodological checklist used. This, for instance, implies that we give more weight – in a qualitative, descriptive sense - to reviews with a rather high methodological score than to reviews with lower scores. We now mention more explicitly how we took the quality of reviews into account in the section “Data analysis and synthesis.

Reactions on the reviewer’s report of F. Legare (Referee 3)

- The referee asked whether the question we posed was new, in the light of the question posed in a paper of Grimshaw et al., published in Medical Care in 2001. Grimshaw et al. appraised and synthesized systematic reviews of professional educational or quality assurance interventions, published between 1966 and 1998. Therefore, this Grimshaw-review is from a broader angle than we have used (a lot of the studies reviewed by Grimshaw et al. focussed on continuing education and not on guidelines). Therefore, the conclusions in the meta-review of Grimshaw et al. will not all automatically apply to specific clinical guidelines.

In addition, our manuscript is worthwhile since a main aim of a meta-review is to provide insight into the current state of a certain area of research. The latest included study in the meta-review of Grimshaw et al. dates from 1998 which means that, automatically, results from more recent reviews have not been included in their conclusions. This, too, justifies our more up-to-date meta-review. However, because Grimshaw et al.’s meta-review of 2001 and our meta-review still have certain aspects in common, we now refer to the paper of Grimshaw et al. explicitly in the Conclusion section.
- The flow diagram of Table 3 needed to present clearly how we went from 108 publications to 11.

In the new version of the manuscript we provide the numbers of excluded studies in relation to the reasons for exclusion in the flow diagram (Table 3).

- The referee pointed to the fact that our search for potentially eligible systematic reviews stopped in November 2006, and that we should update our search. Analyzing and synthesizing results of previous reviews are time-consuming procedures, and therefore a time span between the searches and the submission to a journal cannot be totally avoided. However, in reaction to the referee’s point, we have performed an additional search in PubMed from November 2006 - February 2008. The first author (ALF) systematically screened the 89 additional references found, which resulted in two additional publications meeting all our inclusion criteria (Chaillet et al., 2006; Weinmann et al., 2007). In these publications we found no results that alter our conclusions; in line with our conclusion on successful implementation strategies, Chaillet et al. as well as Weinmann et al. concluded that multifaceted strategies are generally the most effective. We pay attention to these recent papers in the Discussion section.

- The referee advised to transfer the next sentence from the Methods section to the Results section: “The references resulting from the searches were entered in Reference Manager and within this programme duplicates were removed. Without duplicates, 885 references remained”. We did not follow this advice, since we consider the search procedures primarily as a methodological aspect which can best be presented in the Methods section.

- The referee wanted more information about our choice not to include reviews or (meta-)reviews exclusively dealing with consensus-based guidelines. As already explained in reaction on the previous referee, we define consensus-based guidelines as “guidelines that are developed exclusively on the basis of consensus procedures, without a systematic analysis of relevant scientific literature”. Papers were not excluded for reasons that they described guidelines using consensus-based knowledge, but for reasons that they exclusively focussed on consensus procedures or consensus based guidelines.

- The statement “Also, reviews or meta-reviews that do not explicitly or clearly differentiate between clinical guidelines and other interventions or products aimed at changing carers’ behaviour were excluded” was not clear for the referee. In the new version we have explained what we mean by “other interventions”, by writing now: Also, reviews or meta-reviews that do not differentiate in their conclusions between clinical guidelines and other professional interventions, such as continuing education or comprehensive quality programs, were excluded. (see section Exclusion criteria)

- The referee asked why we considered a difference of > 1 point in mutual overall scores of the meta-reviewers, to be large? We are aware that treating a difference of > 1 point as a large difference is rather arbitrary; the developers of the “Quality assessment checklist for reviews” (Oxman and Guyatt) gave no instructions on how to deal with disagreements between two reviewers. However, within a
range of 1 to 7, we do consider a difference of > 1 point in mutual overall scores rather large”, and worth discussing the reasons for this discrepancy.

- The referee asked to state the categories (characteristics of the guidelines, characteristics of then implementation strategy etc.) used in the content analysis more clearly.
  *We do this in the section “Data analysis and synthesis”.*

- The referee stated that we tapped into the field of mixed methods systematic reviews (systematic reviews that include qualitative and quantitative studies), and suggested to review the literature on mixed methods in systematic reviews.
  *We are aware of the mixed method methodologies that have been developed and used for primary research and for systematic reviews*. But to our knowledge no methodology has yet been developed for mixed methods approach in *meta-reviews*. Moreover, in *meta-reviews*, like in our meta-review, a synthesis is made of existent reviews or meta-reviews who present their findings often in a qualitative manner. This was also the case in our meta-review: although the included reviews mainly used quantitative primary studies, almost all reviews only reached qualitative conclusions (see Table 5). A mixed method approach is therefore not relevant in this particular meta-review.

- The referee missed a synthesis of the results. In addition, in their opinion, we do not clearly state which factors affect positively or negatively the implementation of guidelines, and whether some factors do both.
  *We now give a more profound synthesis of the most important results in the revised Conclusions section. In addition, we intended to be clearer about the positive or negative direction of the influencing factors. When this is not done, for instance in some lines in Table 5, this is due to the fact that the primary studies included are not always clear in this regard.*

- The referee asked why we included the review of Thomas et al. [53] describing three studies, all compromised by a small sample size or unit of analysis errors.
  *The reason why we included the review of Thomas et al. was that this review completely met our three inclusion criteria, viz. (1) it is a systematic review or meta-review; (2) it focuses on medical staff, nurses or other health care professionals and (3) it discusses factors that influence guideline implementation. Besides, Thomas et al. received a high score on the methodological appraisal by the Quality Assessment Check List of Reviews.*

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We therefore see no reason to exclude the Thomas et al. paper, although that review only included three relevant primary studies with some methodological limitations (the fact that they only included three primary studies is related to the rather strict focus of Thomas et al. on guidelines for nursing professionals). We do have the opinion that the review of Thomas still addresses our main object of interest, viz. factors influencing the implementation of clinical guidelines.

- The referee asked what we mean with the statement “Six reviews, again all with a methodological score of 4.5 or lower, paid attention to environmental characteristics [46-49,52,54].”.

With environmental characteristics we mean, for example, the characteristics mentioned in the subsequent sentences: limited time and personnel, work pressure, negative attitude or limited support of “peers” or superiors.

With “all with a methodological score of 4.5 or lower” we mean that these six reviews were given a score of 4.5 or lower on the used Quality Assessment Check List for Reviews.

In the new version we state this more explicitly by mentioning this instrument explicitly in the various sections.

- The referee states that the Discussion section contains material that belongs to the Results section and that the results section contains discussion points.

It was not completely clear for us which specific parts of the Discussion section and of the Results section the referee was pointing to. However, we have removed some sentences with discussion points from the Results section.

- The referee advised to pay more attention to the implications of the study.

In the revised Conclusion section we discuss implications for guideline developers, implementers and researchers.

- The following statement: “nine out of the eleven reviews scored in the low or middle ranges (major or extensive flaws)” was not clear.
We now give more information in the revised Discussion section by writing: “nine out of the eleven reviews scored in the low or middle ranges of the used Quality Assessment Check List for Reviews, which indicates “major” or “extensive flaws” (see Annex 1).

- It was not clear why the Wensing review and the NHS report were not included as systematic reviews. The Wensing et al. review and the NHS report (and also the mentioned Grimshaw et al. meta-review of 2001) were not included since these publications did not differentiate in their conclusions between clinical guidelines and other professional or educational interventions. However, since these publications of course have relevant overlap with our research focus and findings, we do refer to the findings of the Wensing et al. review and the NHS report in our Conclusions section.

- The referee pointed to some additional references. The references recommended are included in the reference list and referred to in the text (Cabana et al., 1999; Espeland & Baerheim, 2003)