Reviewer's report

Title: An Observational Study of The Effectiveness of Practice Guideline Implementation Strategies Examined According to Physicians Cognitive Styles

Version: 1 Date: 9 February 2007

Reviewer: giulio formoso

Reviewer's report:

General.

The paper by Green et al describes an articulated study, trying to make a quantitative post-hoc assessment on whether the management of a health problem can be more ‘guideline concordant’ if implementation strategies better suited to physicians' cognitive styles are adopted. This is a novel although basic research question that is not easily transferable into practice, since it would imply that the majority of physician types are known, maybe measured by means of a questionnaire; if this is the case (I don't think so), doctors who do not respond to this questionnaire should be not too different from responders (the latter may actually be more compliant or ‘concordant’ on the average).

The tested post-hoc hypothesis is not confirmed by study results although, as correctly stated in the discussion, this may depend on ineffective applications of implementation strategies. To evaluate it quantitatively, the authors use a logistic regression model and data collected at different times: patients’ data refer to years 1999 and 2000, while the physicians' cognitive styles were assessed between 2002 and 2003. This weakens the study, although we may suppose that physicians’ cognitive styles are quite stable over time: the authors actually re-test doctors’ cognitive styles one year after the first assessment and find relatively high values of correlation statistics with the 2003 results.

Overall, the authors made quite an effort, although using (mostly) a quantitative approach for answering to (mostly) ‘qualitative’ questions. The question of evaluating if the success of an implementation strategy also depends on physician types is, in my opinion, an intriguing one, but tailoring each strategy to prevalent types would not be easy. A further step would be to better understand, through a qualitative assessment, whether different cognitive styles can suggest us something about how to make each implementation strategy more effective. Such an aspect (specifically, conformity-oriented physicians concerned about time pressure) is approached in the discussion section, but would require further ‘qualitative’ evaluation.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. authors should discuss how the selection occurring among physicians (about 40% of 745 respond to the questionnaire, almost 100% of whom are males, and only about 22% are left for the final analysis) and among patients (data are available only for 0.6% of the eligible cohort) can affect their results, in view of the initial hypothesis. I would expect that respondent physicians may be more compliant to guidelines, regardless of the implementation strategy chosen. Most of all, patients with complete data may have been followed more carefully by their physicians, who may (again) be more compliant to guidelines.

2. authors should better explain how they specifically create ‘concordance scores’ to describe the fit between each implementation strategy and physician cognitive style (there is a reference, but readers should be able to understand it right in the paper). It is not clear to me how they relate interventions with physician types and how they use the table of weights they refer to. Displaying the logistic regression equation in a figure or appendix may also help. Since scores are added up, authors should also discuss the premise that adherence would arithmetically increase if more interventions were implemented.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
One minor concern is about the display of data: a table showing the odds of guideline concordant care by implementation strategy, according to the different subscales, may help. It could substitute figure 2, which is not immediate.

Discretionary Revisions (which the author can choose to ignore)

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.