Title: Lack of risk information causes overestimation of effectiveness in colorectal cancer screening: Analysis using the Analytic Hierarchy Process

Version: 2 Date: 10 March 2008

Reviewer: James G Dolan

Reviewer's report:

The authors have done a good job of responding to the previous review, but I still have several concerns.

Major Compulsory Revisions

1. Additional information is still needed about the study questionnaire.

The authors have clarified what the comparison questions were but it is still unclear exactly how the judgments were elicited. To make the methods more understandable, a brief summary or list of the comparison sets included in the study should be added to the manuscript; for example, a) effectiveness vs costs, effectiveness vs disadvantages, effectiveness vs costs, b) mortality reduction vs cancer detection, etc. An illustration that has elements substituted for the X and Y variables would also help, for example: “Which to you think is important... effectiveness or costs; Which do you think is more important... effectiveness or avoiding disadvantages, etc.

2. More information is still needed about the subjects excluded due to high inconsistency values.

Information about the number of inconsistent subjects in each group should be included as well as their demographic characteristics. This information is important to indicate the extent to which inconsistent judgments could have affected the study results or the study randomization procedure. It could be added to Table 1.

3. It appears that the authors are referring to an immunohistochemical rather than a guaiac FOBT test. As these two types of FOBT tests differ in their sensitivity and specificity, it is important to make it clear in the manuscript exactly which kind of FOBT is included in the analysis.

4. The subjects' reactions to the risk information could have been affected by how the information was presented to them, or framed. For this reason, one of the summary lists should be included as part of the study manuscript.

Discretionary Revisions

1. Page 12: “We observed a significant change in priority with the provision of risk information.”
Although the provision of the risk information changed the preferred screening method for 8.4% of the subjects, more than 80% of subjects in both groups still preferred colonoscopy. I think including a more expanded discussion of the authors’ view regarding the significance of this change would strengthen the paper.

2. Some additional study limitations should be considered.

In addition to the limitations noted, the results could have been affected by the way the information was formatted. It is also possible that excluding the inconsistent subjects could be a limitation if they were unequally distributed between the two study groups or had distinct demographic characteristics. As noted earlier, more information needs to be included in the paper about both how the information was presented to the subjects and the inconsistent subjects.

3. Both global and local priorities should be reported in table 2.

Currently the data presented in table 2 are the priorities related to the goal. This makes it hard to see if judgments regarding the costs and effectiveness sub-criteria were similar between the two study groups, as they should be since there was no difference in information presented.

Based on the data presented, it appears that the two groups differed in priorities assigned to the two effectiveness sub-criteria. The ratio between mortality detection rates and cancer detection rates in group A is 1.87, in group B it is 2.6.

I think it would be better to report both global and local priorities along with a table footnote explaining the difference and how the final scores were calculated. If there were any differences between the groups regarding the priorities assigned to the Effectiveness or Cost sub-criteria, this should be pointed out and the possible reasons for the difference discussed in the paper.

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

**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.