Reviewer's report

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

**Version:** 1  **Date:** 2 January 2008

**Reviewer:** James G Dolan

**Reviewer's report:**

This paper addresses an important question for mass screening programs: how much information should be provided to patients about the recommended screening procedures.

**Major compulsory revisions**

1. **Additional information is needed about the questionnaire used to conduct the study.**

   Although the content of the study questionnaire is fully described, it is unclear exactly what was asked of the study respondents and how it was presented. Including this information in the manuscript would help readers gain a better understanding of what was done.

2. **Information about the consistency index results needs to be included.**

   On page 9, it is reported that 68 respondents had consistency index values greater than the cutoff of 0.15 and were excluded from the analysis. No information is provided about the consistency index values of the 285 respondents who were included in the study. This information is important in judging the results of the AHP analysis and should be included in the study report. It is also important to report consistency index information separately for each study group and whether the patients who were excluded due to high consistency index values were equally distributed between the two study groups.

3. **Additional information needs to be included about how the AHP analysis was performed.**

   The manuscript currently does not include any information about the method used to calculate the AHP results. Was one of the commercially available software products used or a programmed spreadsheet? If the latter, the methods used to derive the priorities should be stated.

   For readers relatively unfamiliar with the AHP, it would be worthwhile including a brief expanded explanation of how the group decision-making process is done in addition to the brief statement on page 9. This information would help them better understand and interpret the results presented. A brief footnote referring to this explanation would increase the understandability of Table 2. It would also be good to note that the table reports global priorities.
4. The characteristics of the two study groups need to be reported separately. Currently, Table 1 includes only information about the entire study group. This same information needs to be presented separately for each study group to make sure that the randomization process produced study groups that were equivalent with regard to these parameters.

5. The implications of not including detection of polyps in the analysis needs to be discussed. A commonly stated objective of colorectal cancer screening programs is to identify and remove potentially pre-cancerous polyps. The fact that the model did not include polyp detection does not invalidate the results but needs to be acknowledged as a limitation of the model used for the study.

Minor Essential Revisions
1. The perspective of the study model should be made explicit. Although the model presented seems to be intended to represent the patient point of view, I think it is worthwhile making this intention explicit to avoid potential confusion with cost-effectiveness analyses that are typically done from a societal perspective.

2. The meaning of the overestimation of colonoscopy effectiveness presented as the primary result of the study needs to be discussed further. As stated, it seems to me that the magnitude of the overestimation could either be the difference between a priority of 0.603 and 0.652 or between an 89.2% versus an 80.2% likelihood of preferring colonoscopy. A more clear explanation of which result the authors are referring to when they use the term overestimation would improve the clarity of the manuscript.

Discretionary revisions
1. On Page 4, the term “selection problems” in the phrase “We structured several selection problems into the hierarchy” is confusing. Use of an alternative term or re-stating this phrase would help readers understand this part of the study better.

2. The time needed for colonoscopy seems quite short. On page 8, the authors report that they estimated a colonoscopy would take about 2 hours and 15 minutes of a patient’s time. This seems to exclude travel and waiting time and any time to recover from sedation. (Most colonoscopies in the US are done under sedation and, in addition to the patient’s time, require the time of someone to drive them home.)

3. Several additional study limitations should be mentioned. In addition to the limitations already included in the manuscript and mentioned
elsewhere in this review, it should be pointed out that much of the data used were estimates with broad ranges. It is possible that use of different estimates could have affected the study results. Because the same data were given to both groups, this would be more likely to affect the values of the calculated priorities than the differences in priorities between the two groups.

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

**Declaration of competing interests**:

I declare that I have no competing interests