Reviewer's report

Title: Explaining variation in GP referral rates for x-rays for back pain

Version: Date: 27 March 2006

Reviewer: Sally Green

Reviewer's report:

General
Thank you for the opportunity to review this interesting and well presented paper.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
1. While the data is rich, the sample size is quite small. The implications and limitations of this should be addressed in the discussion section of the paper.
2. 55 GPs were invited to participate and 29 agreed. If the data is available it would be helpful to reflect on whether there were demographic differences between those GPs who volunteered and those who chose not to participate.
3. Only a subsample of 5 of the transcripts were double coded. Again the possible implications and limitations of this should be discussed in the discussion section of the paper.
4. The discussion section should be expanded to include the potential limitations of the study (small sample, potentially non representative sample), and the likely implications of this on the conclusions of the study.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
1. Consider use of 'GPs who' rather than 'GP's that' (eg Page 8)
2. The first sentence, second paragraph of the background lists specific 'red flags' as indicators for x-ray. This is not always the case, with the potential to use other forms of imaging than plain x-ray in these circumstances.
3. There is a typographical error resulting in an incorrect citation number (201 should be 20) page 4

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Discretionary Revisions (which the author can choose to ignore)
1. The theoretical basis of the analysis (linked to behavioural theory) is not discussed. It may be interesting to group the barriers into behavioural constructs.

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.