Reviewer's report

Title: Factors influencing general practitioners for the referral of elderly cancer patients

Version: 1 Date: 8 June 2010

Reviewer: Paul Brocklehurst

Reviewer's report:

General comments
Introduction read well and was referenced appropriately.
It would help the reader if there was more clarity in the methodology about the source of the variables entered into the logistic regression model (see later comment). It would also be helpful to include a copy of the questionnaire so that the reader could more easily relate to the data being collected.

In the results, it would be appropriate to include more detail on the values of the test statistics and their level of significance.

The discussion is "light" compared to the introduction and would benefit from comparing the results to further studies, for example, those alluded to in the introduction for comparison. I would also extend this section a little further.

The conclusion does not include the most startling finding that their was no significant difference between the decision to refer early and late cancer (overlapping confidence limits of 48.4-58.0 and 42.1-51.7 p7). This would also need to be added with more prominence to the discussion and the abstract.

Major Compulsory Revisions - not identified

The remaining points are minor Essential Revisions

Specific comments
Introduction
1. I would replace "catered for" by "cared for" - penultimate sentence p3
2. I would move "using a cross-sectional study" to the end of the sentence describing the aims of the study.
3. I would replace "Secondary aims" as "The detailed objectives of the study were to"

Methodology
4. I would prefer this section to have the subtitles:
   Participants
   Materials and Methods
   Analysis
In the participants section:
5. There needs to be more clarity about what the (n=1500) and (n=4006) refer to, otherwise the reader is left confused about what the numbers represent.
6. Another sentence is required to detail how the random sampling was undertaken.
7. Was there any ethical requirements that needed to be fulfilled? If so, these would need to be included.

In the materials and methods section:
8. I would replace "tested" with "piloted" - penultimate sentence p4.
9. The description of the questionnaires components requires a little more clarity (this would be helped by the inclusion of the questionnaire in a Table).
10. More detail is required about how the clinical cases were developed. For example, why prostrate and colon cancer, was it representative of early or late disease, how much information was included (history, examination, special tests etc), was it validated by a gold standard to determine whether it was appropriate to refer/not refer the case.

In the statistical analysis section:
11. I would add "using a Z-test approximation for proportions" to the sentence describing the statistical test for proportions.
12. More clarity is required in the sentence starting "For each of the clinical case vignettes". What does it mean that the attitudes of the GP were described ... and then the elements were set against? Again this would probably be clearer for the reader if the questionnaire was included.
13. Variables aren't qualitative or quantitative so I'd phrase this as "the variables from the qualitative section".
14. Not clear what "depending on conditions of application" means - first sentence p6. Better replaced with "as appropriate"?
15. The section on the variables from the quantitative section requires more clarity, does this include the case vignettes?
16. I would replace "with an alpha risk of error of 5% with "with alpha set at 5%".
17. The section on the logistic regression needs more clarity as I was a little unsure about what variables were being used. As highlighted above, did these stem from the first four sections of the questionnaire or the clinical vignettes? I was also ensure what the 20% threshold was referring to in the univariate analysis. I am presuming that all the assumptions of the statistic tests used were satisfied?

In the results section:
18. State the response rate
19. Given overlapping CIs on the two proportions (early vs late) for "always"
referring (2nd paragraph p7) - would be worth undertaking a Z-test approximation of the difference in proportions in order to state whether there was a significant difference. Or state given their overlap, there was not a significant difference. This was one of the most interesting results from the study.

20. Were the difficulties reported/detailed? (4th paragraph)

21. I would replace "respectively nearly 10% and just over 5%" with "approximately 10% and 5% respectively".

22. A little more clarity in the second paragraph starting "An exploration…" would be helpful.

23. Important to include statistical test values and levels of significance in the text too e.g. the OR (and CIs) for the logistic regression and their p values. How many responses were entered into the regression - was their sufficient power?

24. The term "organ specialists" would be better replaced with "secondary care specialist"

In the discussion section:

25. Final sentence on p8 and first sentence on p9 are a little unclear and need clarification.

26. The paper would benefit from more contrast with related studies, which are referenced in order to elaborate and strengthen the discussion.

27. I would add "..., however, the results should be interpreted with this in mind" to the penultimate paragraph (first para on limitations)

In the conclusions section:

28. I would add that there was no difference between early and late stage disease.

In Table 2:

29. Worth adding an extra column and dividing the first two columns into "early" and "late" cancers

30. Worth ordering "variables" according to "P", "T" and "O"?

In Table 3:

31. I would include B and its SE, R squared and chi squared

**Level of interest:** An article of limited interest

**Quality of written English:** Needs some language corrections before being published

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