Reviewer's report

Title: Factors prompting PSA-testing of asymptomatic men in a country with no guidelines: A national survey of general practitioners

Version: 1 Date: 8 August 2008

Reviewer: Melina Gattellari

Reviewer's report:

Thank you for the opportunity to review this manuscript. This is a well written article reporting findings from a national survey of Irish GPs about PSA screening for prostate cancer. While a number of previous studies have addressed this issue, this submission extends existing work by considering a more varied set of predictors of GP self-reported behaviour, including GPs' own uptake of PSA screening and their knowledge about the issues relevant to PSA screening.

I have recommended the following revisions:

Minor Essential Revisions:

1) Subjects and questionnaire administration: The authors state that they have described the creation of their GP data base elsewhere. While referring to previously published work is widely used by authors, I feel that it would be necessary to describe how the data base was created as this methodological detail would allow the reader to make a decision about the likely representativeness of the GPs targeted by the study.

2) As a reader, I would have appreciated a table which outlines the characteristics of respondents, and more importantly, the n's and percentages associated with the questionnaire responses. Such a table would enable the researchers to present both the questions asked and the responses given to each of the questionnaire items. While I appreciate that not all questionnaire items need to be presented in this way, the n's and percentages of key variables should be displayed in a table.

3) It is not usual scientific convention to start sentences with numbers (eg "29% of GPs frequently...." page 9.

4) Much detail is presented in the tables of multivariate analyses. This level of detail may be distracting to the readers who may wish to refer to the tables to identify key and essential results. A few suggestions for simplifying these results: a) only present the univariate and multivariate (adjusted) ORs and 95% CIs for those variables that are statistically significant in the multivariate analyses. b) Eliminate referent group OR as this is always 1 and instead indicate referent category using an asterisk; c) the column for "no" is redundant as row percentages for no and yes sum to 100% and the denominators are presented. d) Instead of a separate column for 95%CI, indicate the CIs within brackets that immediately follow the presentation of the OR. d) Do not report the univariate
p-values and instead only report the multivariate p-values.

4) When presenting results in tables, I would report variables and response categories as these were presented in the questionnaire (for example, was OK a response category for GPs answers to questions assessing PPV?).

5) I would recommend moving results of comparisons between responders and non-responders from the discussion to the end of the results section.

6) I would recommend including in the methods details of how responses were combined and perhaps justify those combinations. For example, did GPs report their workload as less than or greater than or equal to 8 weeks? If not, the authors should justify their selected cut-off. Similarly, it seems that many variables in the analyses were reduced to dichotomous variables, whereas it is unclear that this is how the questions and response sets were presented to the GPs.

Major Compulsory Revisions:

1) The multivariate statistical analysis presented in Table 1 may be affected by multicollinearity between the predictor variables (or unstable parameter estimates). The unadjusted OR for gender is 0.96 and the percentages are equal, yet the multivariate analysis shows a statistically significant effect of gender with an increased odds of testing amongst female GPs compared with male GPs. However, I wonder whether females are less likely to be full-time, principal members of practices and to work more than 8 sessions per week? If not, the estimate of workload also appears problematic as the odds ratio in the univariate model changes indicates an increased odds of testing associated with practising for at least 8 sessions per week, but the multivariate model indicates a reduced odds of testing for those GPs practising for at least 8 sessions per week. If these variables are highly correlated, then an independent assessment of these variables in a multivariate model may be compromised by collinearity and create statistical instability. A diagnostic of instability is when parameter estimates change signs (ie from negative to positive, as appears to have happened with the assessment of gender and number of sessions per week), and/or inflated standard errors (and corresponding wide confidence intervals). I am therefore concerned that the model is not valid as it is currently reported. My recommendation would be to remove variables from the model that create instability in the parameter estimates (ie probably remove gender first and then test the effect of the remaining variables). I would recommend the authors refer to Hosmer and Lemeshow's text on logistic regression analysis for guidance on identifying and dealing with parameter instability.

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

Quality of written English: Acceptable
**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests