Author's response to reviews

Title: Assessing measures of comorbidity and functional status for risk adjustment to compare hospital performance for colorectal cancer surgery: a retrospective data-linkage study

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Author's response to reviews: see over
Dr Niels Peek  
Editor  
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Dear Dr Peek  

Thank you for your correspondence of 9 March 2015 in which you invited us to revise and resubmit our manuscript in response to some additional reviewers' comments. Our point by point response follows.  

Referee 1  

1.1. Advises of an error in numbering of References 23-25  

We thank the reviewer for picking up this error. There are 24 references in our revised manuscript. In the text, reference 24 has been changed to 23, and reference 25 has been changed to 24. The reference list has also been corrected.  

Referee 2  

Major Compulsory Revisions:  

2.1 Requests the statement in the Conclusion that the Charlson Index has complete coverage should be 'tuned down'.  

We have edited the manuscript (Page 15, first paragraph under ‘Conclusions’, lines 5-6) to modify the statement of ‘complete coverage’ to indicate that the Charlson score can be computed for all patients using administrative data. We have also edited the Conclusions section of the Abstract to address this point (page 3).  

2.2 Suggests removal of first sentence in the Conclusions of the Abstract.  

This sentence has been removed.  

2.3 Suggests removal of similar sentence from 2nd para of the Conclusion on page 15.  

This sentence has been removed.  

2.4 Queries the need to adjust for peer groups in the analysis  

The primary goal of this paper was to optimize risk adjustment models to enable valid comparisons to be made between hospitals. Therefore, it is important to adjust for hospital-level factors that are likely to impact on outcomes, such as the type of hospital. The hospital peer group is a measure of both the size and comprehensiveness of service provided, and as such allows for tertiary referral teaching hospitals to be compared with each other, rather than with other types of hospital such as district general hospitals. To further clarify this issue, we have changed the title of the paper to reflect that the goal of the risk adjustment is to enable comparisons between hospitals.
Minor Essential Revisions:

2.5 Background section in Abstract describes study methods
This sentence has been revised as a statement of aims (page 2).

2.6 Background section in Abstract lacks study objective
As above, this sentence has been reworked as a statement of aims (page 2).

2.7 Request further description of the random effects model in the Statistical Analysis section of the Methods and inclusion of the ICC in the Results
We have now included an additional sentence in the Methods section (page 9, second para under ‘Statistical analysis’) to provide further information about the random effects models, specifically that hospital was included as a random effect.

The ICCs were zero for all models and we have now included this information in the Results section (page 11. Para 4).

2.8 Advises there is no reference to Table 2 in the revised text
We thank the reviewer for picking up this omission and have now added the reference in the suggested place (Results, page 11, para reporting correlations between the three measures).

Our revised article comprises an Abstract of 338 words, text 2941 words, 24 references and 4 tables.

Thank you for considering our revised manuscript.

Yours sincerely

Professor Jane Young
Professor in Cancer Epidemiology