Author's response to reviews

Title: Modelling alcohol consumption as a distribution and determining the impact of the distribution on estimated alcohol-attributable harms

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Version: 3 Date: 25 January 2012

Author's response to reviews: see over
Dear Kate Muller:

Thank you for your efforts in reviewing the manuscript entitled “Modelling alcohol consumption as a distribution and determining the impact of the distribution on estimated alcohol-attributable harms” (Manuscript ID: 1345390223562212).

Please find attached for your consideration, in accordance with your e-mail dated January 23 2012, a revised version of this research manuscript. I am also attaching detailed responses to the reviewers’ comments, which I have completed in boldface type.

Sincerely,

Tara Kehoe
Reviewer's report

Title: Modelling alcohol consumption as a distribution and determining the impact of the distribution on estimated alcohol-attributable harms

Version: 2 Date: 6 December 2011

Reviewer: Tanja Srebotnjak

Reviewer's report:

The paper addresses the question of what functional form(s) to use when modelling alcohol consumption for the purpose of calculating alcohol attributable health impacts as part of the burden of disease study.

The subject is relevant to PHM and the paper is very well written, coherent and comprehensive. The manuscript is of interest to those working in this field and disease burden assessment.

Major Compulsory Revisions:
None.

Minor Essential Revisions:
None.

Discretionary Revisions:

The authors may want to include a sentence on the feasibility of the assumption of zero consumption for calculation of attributable risk as a public health goal. Nor may it be desirable given that alcohol has also been linked to protective properties such as for ischemic heart disease.

This sentence has been included as well as a statement on the use of the Gamma distribution for different counterfactual scenarios.

Could the authors explain the negative PAFs for diabetes?

We have added a section describing that when an exposure has a protective effect on an outcome the PAF can be negative, as is the case with alcohol’s effect on diabetes at low levels of consumption. (i.e. the negative PAF represents a net number of deaths prevented).

The abstract concludes that Gamma is best without saying why Weibull was not. This seems to overlook the more or less rational decision by the authors to prefer the Gamma over the Weibull not because of better fit (both had very similar results) but because of its
additional flexibility for upshifting and the relationship between its mean and standard deviation as well as the mean and the empirical mean.

The conclusion section of the abstract now states why the Gamma distribution is better to model alcohol consumption when compared to the Weibull distribution.

It appears that R version 11 is cited in bibliography but version 13 cited in text.

The biography citation has been changed.

**Level of interest:** An article of importance in its field  
**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.