Reviewer's report

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

Version: 1 Date: 26 July 2011

Reviewer: Tim Stockwell

Reviewer's report:

Congratulations on an elegant but comprehensive analysis of three alternative methods to model the distribution of alcohol consumption in a population. I believe this is an important advance to the modelling your group conducts in estimates of the global burden of disease.

Major compulsory revision recommended

While you address the issue of truncating the consumption curve at an upper bound of 150 g or more of ethanol per day in the discussion, this is an incredibly important issue for a study of the right-hand tail of the distribution curve. You state that the probability of somebody sustaining this level of consumption (approximately 11 North American standard drinks per day) over an extended period of time as being very slight. My clinical experience suggests otherwise and I have often encountered individuals who routinely consume 3, 4 or more times this amount on a daily basis. In addition survey methods in which individuals can indicate maximum number limits frequently generate numbers as high as 70 or 80 drinks in a day. I would like you therefore to provide some sensitivity tests for you conclusions employing substantially higher upper limits. In addition it will be good if you could comment in the text on the actual proportions of individuals self reporting consumption on average above such cut-offs and a range of this across countries. A note to the effect that self-reported consumption generally greatly underestimate actual consumption would also provide useful context.

Discretionary changes

You rely on two main surveys used internationally - GENACIS and ECAS. It would be good if you could comment on the main differences between these and the extent of their comparability as well as whether or not this affects your study.

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests