Reviewer's report

Title: Cell type specificity of female lung cancer associated with sulfur dioxide from air pollutants in Taiwan: an ecological study

Version: 3 Date: 20 November 2011

Reviewer: Fintan Hurley

Reviewer's report:

I thank the authors for addressing so thoroughly the previous review comments. I appreciate both the changes to the paper itself and the explanations of the covering letter. I appreciate in particular the following.

a. I think the discussion on active smoking is good and I agree that it is unlikely to be a major confounder.

b. I appreciate similarly the detailed discussion of ETS, with special reference to evidence from East Asia.

c. Also the detailed discussion of the relationship between PM10, PM2.5 and SO2

d. And the revised perspectives on causality of SO2.

I am happy with the revised paper as submitted and I congratulate the authors on it.

There are nuances on which I would differ but these are all well within the range of reasonable discussion and legitimate difference of opinion. However, on one of them – that the likelihood of confounding with ETS is ‘negligible’, I would like the authors to consider a weaker version. [This does not change their conclusions about SO2.]

• I suggest a new paragraph for ETS at Line 201. This would imply a conclusion at that point in the paper about active smoking not being an important confounder in this study.

• More importantly, I suggest a milder version of the conclusion on ETS. In doing this I admit that I’m not familiar with the papers referred and in particular I don’t know how strong are the negative studies are that are quoted (i.e. is the absence of a relationship because the underlying study was not powerful or is it because ETS really is having no effect). My disposition is to think that ETS is dangerous, whether or not particular studies show it to be so; and from that perspective I would have the conclusions there (Line 220 and onwards) as follows: (I'm unable to underline the changes):

Although ETS may well be a risk factor for lung cancer, there is currently no strong or clear evidence indicating ETS is a risk factor for lung SCC in non-smoking women in Asia. We, therefore, assume that ETS is unlikely to have
been an important confounder in the present study and not controlling for ETS is unlikely to have had an important effect on our results.

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

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

As before