Reviewer's report

Title: Smoking and primary total hip or knee replacement due to osteoarthritis in 54,288 elderly men and women

Version: 3 Date: 29 August 2013

Reviewer: Peter Lee

Reviewer's report:

1. The authors are quite right in their comments regarding specificity and sensitivity, terms which for some reason I had got crossed over in my mind.

2. I am very happy with the new Table 6, which is easy to understand and makes the relevant point very clearly.

3. I am also very happy with omission of the graph that I could not understand.

4. The changes made are fine as far as I am concerned, though there are a few points which the authors could be trusted to deal with, without reference to yet another review:

   (a) On page 8 line 4 of the first paragraph, and in the footnote to table 6 the phrase "the probability of someone smoking is classified as smoking" is used. Unless Australian English differs from English English it should be "the probability that someone smoking is classified as smoking" is used.

   Or possibly "the probability of a true smoker being classified as a smoker" is better still.

   (b) On page 11 on the last line but two "... declined to be..." should be "..was not.."

   (c) Somewhere in the paper it should be pointed out that the sensitivity/misclassification analyses are carried out under the assumption that misclassification of smoking status is unassociated with having a total joint replacement.

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I am a long-term consultant to the tobacco industry