Reviewer's report

Title: Data enhancement for co-morbidity measurement among patients referred for sleep diagnostic testing: an observational study

Version: 1 Date: 10 April 2009

Reviewer: Eva Libman

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Data Enhancement for co-morbidity measurement.....

The goal for the present study, i.e. evaluating the efficacy of administrative databases to enhance accuracy of self-reported co-morbidities in individuals referred for sleep diagnostic testing, is clearly presented. The context and rationale for why such an evaluation is important is also presented in a clear and logical progression.

(1) Minor essential revision

One minor point to be addressed in the Background section. There are more recent references available for the statements in the first paragraph. Current population OSA prevalence data estimate the ratio of females to males to be more similar, although the discrepancy continues to be pronounced in sleep clinic samples. The references for cardiovascular co-morbidities are numerous, so the two cited should be considered examples.

The Methods section is well-written. The design and procedures are well-described. The statistical analyses are appropriate and generally clear.

(2) Minor essential revision (clarification)

The definition of “enhanced co-morbidities” should be spelled out more clearly, as does the authors’ position on the best method to ensure accuracy. The concept and importance of stratifying by OSA severity is clear, however after several re-readings, I interpreted the findings to mean that in no case did the combining of all sources of information enhance accuracy, but either information source, combined with the severity stratification most accurately reflects co-morbidity prevalence. However, this was not directly demonstrated in Results. In fact, it looks as if combining data sources would be expected to decrease accuracy. The last sentence, 1st paragraph in Discussion: “These results suggest that both data sources should be used if possible when defining co-morbidity in OSA patients, as use of either source alone will result in an underestimate of the prevalence of these conditions” as well as the 1st sentence of Conclusions: “We found that administrative data in combination with survey data has the potential to create a more complete measure of the co-morbidity among patients referred for sleep diagnostic testing” maintains my confusion on this point.
(3) The important new findings about data enhancement emerging from this study should be clearly identified in the Discussion. Implications of the present findings for past studies of this type, and suggestions for improving future research should be clearly stated in the Conclusions section.

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

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I declare I have no competing interests