Reviewer’s report

Title: The prevalence of clinically-relevant comorbid conditions in patients with COPD: a cross-sectional study using data from NHANES 1999-2008

Version: 2 Date: 22 February 2012

Reviewer: Cecilie Svanes

Reviewer’s report:

This paper report an important analysis of comorbid conditions in patients with a doctor’s diagnosis of COPD based on analysis of NHANES 1999-2008. The paper concludes that comorbid conditions are found in 94% of these COPD patients, and appeal to the need for taking this into account in clinical trials and practice guidelines.

This is an intelligent and well-focused analysis of a large and well-known dataset, the issue is highly relevant, the interpretation is sound, and the presentation is generally very good. The investigation of the three domains – diseases, clinical factors, and health status factors – is a very useful and original approach.

Minor essential revisions

The main problem of the analysis is the definition of COPD, based on self-reported doctor’s diagnosis, while COPD is a spirometric diagnosis. The authors recognize this limitation, and refer to the validation analysis from the Nurses’ Health Study. I believe doctor’s diagnosed COPD is a relevant outcome, but it is different from what most readers understand by the term COPD. Potential consequences for the presented analysis are not discuss adequately; i.e. it is not unlikely that comorbidity is more common in the COPD group reporting a doctors diagnosis than in those with undiagnosed COPD. This should be dealt with in the discussion, if possible, with some estimation based on the subsample with spirometry data. Further, the authors should use the term “doctor’s diagnosed COPD” in title, conclusions of abstract and discussion, figure titles etc – within reasonability, throughout the manuscript. If the definition is thus made clear throughout the paper and the possibility for differential bias discussed, I think a validation analysis is not essential.

In tables 1 and 2 it is correct to state the number included in analysis, but the number represented by this should be excluded from the tables. This could rather be included in foot-notes, revised to reflect that the sample is not globally representative, but concerns non-institutionalized civilians in the US.

Figures 1-3 are rather busy but could easily be made more accessible; i.e. they would be easier to read if women are illustrated with open symbols and men with closed symbols. It is not entirely clear what is compared with what.
Discretionary Revisions
Would it be possible to extend table 2 with age- and sex adjusted p-values?

**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 that I have no competing interests.