Reviewer's report

Title: A Cross-sectional Study of the Identification of Prevalent Asthma and Chronic Obstructive Pulmonary Disease among Initiators of Long-Acting Beta-Agonists in Health Insurance Claims Data

Version: 1 Date: 23 April 2013

Reviewer: Elizabeth Wasilevich

Reviewer's report:

Major Compulsory Revisions

1. While it is clear from the authors' manuscript that they had a particular clinical interest in identifying these conditions among LABA users. However, their study has merit beyond the LABA users. The discussion section would be enhanced by additional information about why the authors chose not to look for all COPD/asthma...and not just the LABA users for these conditions.

2. Essentially, their case definition begins with LABA use and then looks for additional claims evidence of a single diagnosis. It does not appear that they tested for multiple diagnoses. Increasing the number of claims for these diagnoses during the look back period would enhance their case definition or may be a discriminating covariate worth considering. The authors should examine the affect of multiple claims on their case definition.

3. The description of the case definition for asthma/COPD needs more specificity. Were both facility and professional claims considered? Were they considered equally? What was the diagnostic priority for which they looked for cases, ie primary diagnosis? If in fact the definition was based on an 'any mention, anywhere' approach, regardless of the diagnostic priority, it may have lead to a lower PPV. The authors should evaluate the diagnostic priority of the claims defining asthma/COPD as a discriminating covariate.

4. There are claims-based case definitions for these diseases that, while are typically based on 12 months of claims, are more complicated and more restrictive than the case definition used by the authors. Specifically, the HEDIS definition for asthma weights the places of service differently for different types of claims. Since these definitions exist, the authors should mention their existence and why they weren't used in this study.

5. The authors state that only those LABA prescriptions filled on the same day as an ICS were considered concomitant therapy. It would be better to define concomitant therapy as prescriptions where the days supply overlap.

Minor Essential Revisions

1. Last paragraph of results section, the word 'once' should be replaced with 'one'

2. The authors describe the study population as a cohort. Since this is a cross-sectional design, referring to the study population as a cohort is confusing.
It would be better to refer to them as 'study population'.

Discretionary Revisions

1. It is unclear from the description of the study population why the authors have focused on a population >=20 years. Was there some reason for this? The results of this study for pediatric asthma would be particularly interesting and therefore exclusion of children should be explained.

2. Table 2 does not appear to be necessary if the findings are summarized in the results section.

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

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I declare that I have no competing interests.