**Reviewer’s report**

**Title:** Impact of asthma control on health care costs and quality of life in France and Spain

**Version:** 2  **Date:** 21 August 2012

**Reviewer:** Pinar Karaca-Mandic

**Reviewer’s report:**

Review of “Impact of asthma control on health care costs and quality of life in France and Spain”

This study is based on observational data from patients with asthma in Spain and France. The study assesses the associations between asthma control and costs and HRQL. The study finds that costs increase and quality of life decreases as asthma control level decreases.

**Major comments**

1) I would recommend that the authors strengthen the motivation and the contribution of their paper. The authors provide references to several similar studies in Europe, so it is not clear how this study differs from others.

2) Is it possible to control for asthma severity, and/or length of time since asthma diagnosis?

3) Patient selection into the study sample requires receiving at least one anti-asthmatic medicine. It would be important to distinguish between those on quick relief meds versus control therapy.

4) More information is needed on the sampling of the GPs. Please be specific, for each country, about the sampling frame, number of GPs eligible to participate, number of selected GPs and the number of GPs who participated. Please describe the response rate, and potential response biases.

5) Is there a way to assess whether the GPs who participated were similar to those who declined? In what ways were the participant GPs different than those who did not participate?

6) Similar to the above comment, it is important to show in the paper how the GPs included in the study were similar to the general population of GPs in each country. Currently page 7 notes that GPs included in the study were similar to the general set of GPs in each county, but the results are not shown.

7) Data on asthma control (FEV1) is collected from a single visit. More information is needed on whether information from a single visit is a good proxy for overall asthma control from a clinical perspective. The Discussion section (page 17) seems to suggest that GINA criteria recommends assessing asthma control over a 4-week period.

8) Data analysis: Please explain why the data is weighted by the number of
patients enrolled in each wave. In survey data weighting is typically important to produce nationally representative samples, or to adjust for non-response. It is not clear what the goal is here. Also, please provide tables that show whether/results are much different if the data are unweighted.

9) Please provide more information on the GINA criteria for the reader and describe the methodology for determining “controlled”, “partially controlled” and “uncontrolled”. Is it based on the FEV1 measurement on a single visit, or does it also incorporate responses to the questionnaire to capture information from the previous three months?

10) The multivariate regression analyses currently control for sex, age, episodes of asthma exacerbation, prescription of a controller treatment and follow-up by a lung specialist. It is important that the authors also control for other co-morbid conditions. Table 1 shows co-morbid conditions (such as depression) vary significantly by the asthma control level.

11) Is it possible to control for asthma controller medication adherence?

12) It is strange that the costs of anti-asthmatic drugs are much higher for the “uncontrolled” groups relative to partially controlled and controlled groups (Table 3). Presumably patients who are adherent to their asthma controller drugs should have better control. Such patients should also have higher cost of controller drugs. It would be helpful to divide the cost of drugs by long term control drugs versus short term quick relief drugs.

13) The Discussion section states that “the higher costs for patients with uncontrolled asthma were mainly due to costs of controller treatments and not to complications of asthma” (page 17). I do not believe that the authors have provided a statistical test or analysis to claim this. Is this based on Table 3 (which does provide components of the average costs, but does not test for differences)? Even then, Table 3 does not provide information on the components of “additional costs for patients with uncontrolled asthma” (relative to patients with controlled asthma).

Minor comments:

1) Overall, the paper would benefit from rewriting, tightening, and perhaps by having assistance of a professional editor

2) Typo on abstract, line 3. Should be “adult patients”

3) Abstract: not clear what is meant by “resources consumption”. Please specify. I believe the authors mean “health care resources utilization”.

4) Abstract: not clear what is meant by “for all costs items”.

5) Page 5, line 3: clarify the sentence “In Spain, the GPs……” Was the sampling frame a GP society, or all GPs in the country?

6) Page 5, under Data collection: Not clear what is meant by “all prescriptions dated prior to the observation period were accounted if the prescription period was included wholly or partially within the observation period (last 3 months).” Do you mean that all prescription drugs taken during the 3 months prior to doctor visit were recorded and included as controls?
7) On page 6: be specific about the list of “qualitative variables” versus “quantitative variables”.

8) On page 6, the term “indirect cost” is used for the first time. Describe what you mean by that (i.e. costs associated with sick leave) when it is first introduced.

9) Tables should be self-contained so that a reader can understand them without referring to the text. They should have better labels and notes. Similarly, the units should be clear. In Table 2, I assume authors are reporting costs in Euros? I also assume authors are reporting averages per group (controlled, partially controlled, uncontrolled). These need to be stated. Also, it is not clear to which test the p-value corresponds. Is it the p-value for a test of the difference between controlled and uncontrolled? Between partially controlled and uncontrolled? Something else?

10) The text does not refer to Table 3. That is the key table describing the unadjusted costs and should be discussed in the text.

11) The unadjusted EQ-5D-3L scores are reported in Table 5, while the multivariate analyses of EQ-5D-3L scores are presented in Table 4. For a better flow of the paper, unadjusted estimates should be presented before the multivariate estimates.

12) On a related note, authors show unadjusted estimates of VAS scores (Table 5), but do not report multivariate analysis results for VAS scores. They should be reported.

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

**Quality of written English:** Needs some language corrections before being published

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

**Declaration of competing interests:**

'I declare that I have no competing interests'