Reviewer's report

Title: General practice variation in spirometry testing among patients receiving first-time prescriptions for medication targeting obstructive lung disease in Denmark: A population-based observational study

Version: 2 Date: 16 February 2013

Reviewer: miguel roman

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The study addresses a key issue in the care of respiratory diseases in primary care such as performing spirometry for the diagnosis of respiratory diseases. It presents certain variables related to the model of care and practice characteristics that could be associated with better or worse care and could show possible areas for improvement in quality of care. The question is well defined and the title and abstract are well on line with the information presented. The discussion and conclusions are well balanced and adequately supported by the data. The method using large population databases with real-life information related to the entire population of Denmark gives great power to the study.

Major Compulsory Revisions

1-However, although we are not experts in statistical methods, we find an important issue regarding methodology that should be addressed or explained before publication. A clarification on whether it makes sense to present the analyze “model 2” that in our opinion doesn’t add much value to the analysis proposed in “model 3” that is already adjusted both for patient characteristics and the other practice characteristics. Actually, the only variation in results provided by this "model 2" appears in Table 4 related to the relationship to the number of patients for practice that appears significantly related adjusted for patient characteristics but not for “model 3”. We do not consider this difference to add any value to the analysis and it adds complexity to tables. Please explain why you consider this “model 2” important for the study analysis or otherwise try to think about getting it out to clarify the information in tables

2-In the introduction section you state that you haven’t found studies assessing to what extend spirometry testing is influenced by practice characteristics. Maybe because is an Spanish study thought it is referenced in Pubmed you didn’t get information from some published studies that should be referenced in this section:

a.De Miguel et al (Arch Bronconeumol 2003, 39 (5) :203-8) showed that the availability of spirometry and living in an urban area were two important factor for correctly managing COPD (Arch Bronconeumol 2003, 39 (5) :203-8).

b.Ruiz Manzano et al (Arch Bronconeumol 2000, 36:326-33) showed that number of patients’ visits per week has also been linked to the performance of
spirometry.

3-No mention is made in the study of this fact and although it could be interpreted that ALL primary care clinics in Denmark have their own spirometry service in-house. This information is principal and should be exposed at some point in the discussion.

4-We find that the limitations are not sufficiently clarified. Given the existence of possible factors related to the practice characteristics that might influence the results that have not being assessed, they should be presented if identifiable by the current databases or presented as limitations for the study if not available:

a. Poorly performed tests and misinterpretation of the results can lead to misdiagnosis and inappropriate management, potentially putting patients at risk. It should be stated in the discussion that the missing data about spirometry values or quality considerably
b. Urban or rural location of the practice and maybe distance to the nearest available spirometry service
c. To know the possible association with spirometry availability in the same practice, which could clearly improve the quality of care due to a better accessibility to the test.
d. To know existence of practice nurses working in the practices and analyze the possible relationship with the primary outcome. Maybe this could be one of the reasons why partnership practices have better results that single-handed and it’s no mention on the discussion or limitations

5-References: GOLD 2007 and GINA 2008 references are not the latest ones. Please get the latest 2012 GOLD and GINA REFERENCES from their website.

Minor Essential Revisions

6-In Table 1 the variable "spirometry proportion" should be briefly explained in the heading.

**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