Author's response to reviews

Title: The validity of using ICD-9 codes and pharmacy records to identify patients with chronic obstructive pulmonary disease

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To the Editorial Board:

Please accept the revised manuscript (2086292237400655) titled “The validity of using ICD-9 codes and pharmacy records to identify patients with chronic obstructive pulmonary disease” for reconsideration for publication as a Research Article in BMC Health Services Research. We addressed the concerns of the referee and present the itemized concerns of the referee in quoted italics below. Our responses to each concern are then presented in plain text.

Referee 1
1. “Age of study participants. Age of participants. The authors re-did the analysis with patients <40 years of age excluded, with little change in the results. I would feel more comfortable with these patients excluded, or at least have the table they presented available to readers on the online supplement, with a sentence in the manuscript reporting that including only those patients over 40 did not change the findings.”

Changes to manuscript: We added the table requested by the referee to the online supplement (Additional File 3). In addition, we added the following to the Methods: “Since the specificity of ICD-9 codes for COPD in younger patients may be low, we also re-fit each model after excluding patients who were < 40 years-old (n=552).”

In addition, we added the following to the Results: “There were no substantive changes in the models’ performance when we limited the cohort to patients over 40 years-old (Additional File 3).”

2. “ICD9 490. The inclusion of the statement regarding the lack of specificity should also be referenced.”
Changes to manuscript: We now provide two references for the following statement in the manuscript: “We did not include 490 – Bronchitis, not specified as acute or chronic in our administrative definition of COPD because the definition itself lacks specificity which increases the concern about misclassification. [23, 24]”

3. “Primary and secondary codes. If the authors could provide a percentage to go along with their comment of ‘uncommonly’ ie this field was used only xx% of the time etc. this would be helpful.”

Changes to manuscript: We added the percent to the manuscript. The sentence now reads, “Although secondary ICD-9 codes were considered for defining a COPD-related visit these were uncommonly (<7% of patients) coded by providers.”

4. “I don’t really agree with the author’s argument - empiric therapy would change after spirometry if the diagnosis ends up being something other than COPD. And to me the period after diagnosis with spirometry makes more sense. However, I will leave this difference of opinion to the editor.”

Changes to manuscript: We added the following limitation to the Discussion: “Fourth, we collected ICD-9 codes from the one year pre- and one year post the date of spirometry, a time interval that may have reduced the sensitivity and specificity of the codes for COPD. For example, a provider may provide a COPD code on initial evaluation only to learn that spirometry rules out the diagnosis of COPD. Nevertheless, we believe the time interval we used is appropriate because it approximates how ICD-9 codes are screened in observational research and provides a conservative estimate of their performance.”

We appreciate the opportunity to further revise our manuscript. We look forward to hearing back from you.

Sincerely,

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