Author’s response to reviews

Title: Lab-based and Diagnosis-based Chronic Kidney Disease Recognition and Staging Concordance

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Reviewer Comments:

1) In the method, "due to lack of claims 1920 (n=2,774,553), lacked lab-based indicators of CKD (n=3,808,777) or were missing the urbanicity covariate 212223 (n=446). " Please clarify the detail of claims, lab-based indicators and urbanicity covariate.

Response: Thank you for this suggestion. In the United States, lab data are not universally available and lab data linked to administrative claims is extremely rare. For the purposes of our study, Medicare claims (i.e. coding of medical conditions) were used to identify diagnosis and the cohort; laboratory data provided by a national vendor was used for eGFR assessment, CKD identification, and cohort identification; and the urbanicity covariate was derived from zip codes and used as a covariate for adjustment in our regressions. We have clarified the details of our research methods as follows:

“We excluded beneficiaries if they were enrolled in Medicare Advantage any time in 2010-2011, had no Medicare diagnosis claims during the study period (n=2,774,553), lacked lab-based
indicators of CKD (e.g. eGFR <90 ml/min/1.73m² or albuminuria; n=3,808,777), or were missing the urbanicity covariate (derived from available zip codes; n=446).”

2) If possible add the group without CKD, compare the outcome of with and without CKD, which will give more evidence of the under-diagnosis of CKD.

Response: We agree that a comparison of the diagnosis of CKD among those with and without laboratory evidence of CKD is of interest (i.e. false positives versus true positives), but is not the main focus of the current paper. The purpose of the current paper is to highlight the low rate of appropriate coding for those with evidence of CKD. Identifying individuals without laboratory evidence of CKD but with a diagnosis claim for CKD is beyond the scope of the current study, but is something we can consider for future analyses.

3) "clinical recognition of CKD from 2011 diagnosis codes" it is not very clear about it.

Response: We have modified our description of clinical recognition to better indicate our intended meaning, that a provider is “aware” enough to add the diagnosis code/claim to the clinical encounter. We acknowledge that it is possible for CKD to be recognized by not diagnosed in claims, and have made that more clear throughout.

“The first outcome of interest was clinical recognition of CKD defined from the presence of diagnosis codes, which was constructed on the cohort of 206,036 FFS beneficiaries with lab-identified CKD (Analytic cohort 1). A beneficiary was indicated to have clinically recognized CKD (i.e. the provider was aware of CKD and submitted a claim for it) if there was at least one diagnosis code from 2011 Medicare claims indicating CKD stages 1-5 (ICD-9 codes 585.1-585.5) or unknown stage (ICD-9 codes 250.4x, 403.9x or 585.9).”
4) the result in table is difficult to follow. If possible, give some charts and survive cure.

Response: We are happy to respond to this comment, but are currently unclear how to do so. Given our uncertainty about how to address this comment, no changes to the manuscript have been made at this point. If this comment was a suggestion to make results in Table 4 more intuitive, it occurred to us that a forest plot of odds ratios and 95% confidence intervals might be of interest. We have generated an example based on coefficients for 4 variables, but it didn't translate when submitting the revision. We would be happy to share a copy by email if requested. If this is what the reviewer was driving at, we would be happy to revise accordingly.