Reviewer’s report

Title: The MDRD equation underestimates the prevalence of CKD among blacks and overestimates the prevalence of CKD among whites compared to the CKD-EPI equation: A retrospective cohort study.

Version: 1 Date: 15 July 2011

Reviewer: Deidra Crews

Reviewer’s report:

The topic addressed by this manuscript is of interest, however, there are a number of steps that the authors might take to improve the readability and interpretation of the manuscript. My comments are noted below by section of the manuscript.

1) Major Compulsory Revisions

--Methods: How was race determined/defined? COPD, Depression and Cancer are not typically adjusted for in models for CKD. The authors might consider adjusting for number of comorbid illnesses as opposed to the individual comorbidities if their hypothesis is that multiple comorbid illnesses is a confounder of the relationship between race and CKD. The sentence ending, “the change in the race parameter...” was difficult to understand, and should probably be revised.

--Results: The data on comorbid illnesses in Table 3 would likely fit better in Table 2. At the end of the Results section, as analysis of patients >65 years is mentioned, but then the Discussion mentions an analysis of those >60. Would clarify.

--Discussion: In general, the Discussion should be revised to have as its central point that differences in CKD prevalence estimates by race may be there because of the equations used to estimate GFR. The authors’ don’t get to this point until late in the Discussion. Further details differentiating the Clase and Coresh studies are needed, including the eGFR equations used in each. The sentence beginning “This relationship held true...” can be deleted as it doesn’t add much to the Discussion. The actual findings of the Delanaye study should be noted. Most of page 13 should be in the Results section rather than the Discussion (it details many of the findings of the study).

--Discussion/Limitations: There are several other limitations that were not mentioned, to include, no measured GFR, and no assessment of proteinuria. Also, some patients’ race may have been misclassified in this administrative database where race was likely determined and coded by a health care provider rather than patient self report.

2) Minor Essential Revisions

--Overall: There are many grammatical errors in the manuscript that should be corrected. Also, the authors should be consistent with their “race” terminology...
and either use Black or African American and White or Caucasian throughout the paper.

--Abstract: Please spell out VISN. MDRD should be the Modification of Diet in Renal Disease Study Equation. Mention of GFR should include "estimated" in the terminology. The CKD-EPI abbreviation was sometimes referred to "EPI". Please correct this for consistency.

--Background: Please provide references for the sentence "This disparity persists...". NHANES includes “Examination”. The sentence beginning, “Thus the relationship…” should be revised to mention race, as this is the central focus of the manuscript.

--Methods: The units of measurement for eGFR using the equations in question are ml/min/1.73m2. There are instances where the authors left off “1.73m2”). It would be useful if the timing of the eGFR measures was mentioned early in the Methods when the CKD definition is noted. ICD should be spelled out. The 2002 KDOQI guidelines referenced do not include mention of CKD stages 3a and 3b as implied in the manuscript. The clinical variables and co-morbid conditions mentioned in the statistical analysis should be spelled out (not abbreviated) and their ascertainment (in the case of the lab values) should be noted in the initial portion of the Methods. The timing of these lab values relative to the creatinine would be especially important to note. The authors mention “categories” of eGFR sometimes and other times stages of CKD are mentioned. This should be clarified for consistency.

Results: Table 2—Only the Male (or female) line is needed for Gender since it is dichotomous. The sentence beginning “The logistic regression for CKD…” should be revised to include the word “model”.

Discussion: The sentence beginning, “There are several possible factors…” needs references. The statement “…blacks presenting to a primary care physician later…” many need revision as I believe the authors’ meant to mention referral to a nephrologist??

3) Discretionary Revisions

--Background: The authors should probably reference studies showing that CKD-EPI is more predictive of outcomes than MDRD (ie. Matsushita, AJKD 2010).

--Results: The sentence “It has been suggested…” should probably either be in the Introduction or the Discussion as opposed to the results.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.