Reviewer's report

**Title:** Estimated glomerular filtration rate as an independent predictor of atherosclerotic vascular hospitalization in older women

**Version:** 1  **Date:** 22 February 2012

**Reviewer:** William McClellan

**Reviewer's report:**

**Major Compulsory Revisions**

**Comments:** The authors seek to determine if impaired eGFR is an independent risk factor for future occurrence of ASCVD among older women after accounting for risk predicted by the Framingham model. There are several general concerns that make it difficult to assess the manuscript. First, the I don't think the use of the Framingham risk scores is consistent with the literature. Second, excluding deaths from the analyses is problematic. Third, it is difficult to follow much of the presentation of the results of joint adjustment of the FRS and eGFR on hospitalization.

1. Methods, outcome assessment. You state that "The primary outcome was an atherosclerotic vascular disease event causing hospitalization this was because ASVD mortality did no obey the Cox proportional hazard assumption ". Does this mean that deaths ascribed to ASCVD that occurred out of hospital were excluded in the primary analyses? There are a number of approaches to modifying a Cox PHM to account for non-proportionality and you should consider using one. This is particularly so as the Framingham prediction score is based on both deaths and nonfatal CHD events. How was mortality handled in the hospitalization analyses?

2. Methods and Table 2. Are the HRs for the Framingham risk scores based on the predicted risks derived from tables in the cited reference (22) or are they empiric estimates based on the score added to a Cox PH model? If the former then this is an unusual means of using the Framingham risk score, and it should be described in detail with supporting citations. In the methods.

3. Methods, Framingham score. The Framingham score should be estimated for individuals free of ASCVD at baseline. Including prevalent cases of ASCVD in the follow-up may bias the comparisons between risk predicted by eGFR alone and that predicted by an equation developed for healthy adults.

**Minor Essential Revisions**

4. Results. The presentation of the results in the paragraphs beginning “To put these findings in a clinical context the effect of eGFR on ASVD hospitalization…” is interesting but difficult to follow. One or more figures illustrating these points would be welcomed.
5. Results, mortality. The presentation of the mortality results is not informative. What was the event rate? If you are going to separately analyze mortality there should be appropriate tables and detailed presentation of results.

Discretionary Revisions

6. Results, Figure 1. There is no legend for this figure that I can find; it doesn't seem particularly informative.

Results. Given the degree of missing data it is not clear that the inclusion of lipids strengthens your results.

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

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

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

**Declaration of competing interests:**

I declare that I have no competing interests