Reviewer's report

Title: Predicting Hospital Cost in CKD Patients through Blood Chemistry Values

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Reviewer: Britt Newsome

Reviewer's report:

I greatly appreciate the opportunity to review the manuscript “Predicting Hospital Cost in CKD Patients through Blood Chemistry Values”. I applaud the idea for this analysis; I think it could represent a useful tool in assessing costs within the CKD population. However, I am concerned that these data are not the source in which to perform this study. My specific concerns are 1) the relatively small sample size, 2) The relatively high percentage (20%) of patients requiring exclusion and the few details provided on these patients, 3) The strong risk of confounding by indication given the high level of missing values for PTH, 4) The strong risk of confounding from unmeasured factors given the lack of comorbid medical diagnoses available to the investigators.

Major Comments:

1. Method (page 6, Samples Analyzed): The authors list approximately 19.6% of the original registry population were excluded due to lack of repeated eGFR <60 within 3 months. This requires clarification. Are the authors suggesting that the eGFR was measured and it was >60 or it wasn’t measured at all within this time period? Were there some patients who perhaps had two eGFR measurements but they were longer than 3 months apart- could these patients be included in the study? What were the characteristics of these excluded patients? Were they significantly different from the analytic population? Can the authors reliably say that they did not have CKD? Perhaps a sensitivity analysis to see if their exclusion affects results given that they represent a large portion of the sample population.

2. Method: Further details regarding the kidney registry which serves as the source population for the study are required. How were the patients selected for this registry?

3. Method: Were comorbidities available?

4. Method: There appears to be enormous potential confounding by indication in this study. As I read page 7, only 267 of 888 patients had PTH measured which seems like an unreliable sample in which to test associations of PTH with hospitalization.

5. Conclusion: I see no section which addresses the study’s limitations.

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

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