Reviewer’s report

**Title:** Profile and outcome of patients with emergency complications of renal failure presenting to an urban emergency department of a tertiary hospital in Tanzania

**Version:** 0  **Date:** 15 Nov 2018

**Reviewer:** Matthew Strehlow

**Reviewer's report:**

Review - BMC Emergency Medicine

November 2018

Title -

Profile and outcome of patients with emergency complications of renal failure presenting to an urban emergency department of a tertiary hospital in Tanzania

Number -

EMMD-D-18-00111

Overall. With appropriate revisions would be of interest to the readers of BMC Emergency Medicine. It is well written and is novel information regarding global emergency care.

Major

Background/Discussion:

A key finding of the study appears to be the many patients with indications for dialysis that did not receive dialysis. This determination that dialysis was indicated is supported by the finding of the higher mortality in those that did not receive dialysis. Some background on access to dialysis in the country/region would be beneficial. This could then be the focus of part of the Discussion as well.

Methods:

Page 3 Study Protocol - this needs to be better delineated. See minor comments below.
The logistic regression requires further explanation/review. It appears you have 10 variables that you analyzed (e.g. multiple age categories would count as two). With only 57 deaths and 53 included in analysis this seems like too many variables (general rule 10 outcomes per variable). Also, the choice of variables seems a bit odd. When choosing variables that did not show significance in the univariate analysis it is surprising to choose urine output, as opposed to respiratory distress or elevated K+, to put into your model. Normally, I would expect if choosing variables that did not show significance on univariate, they would be variables where you have a very strong suspicion that they are predictive. Elevated K and respiratory distress seem more likely short term predictors of mortality in renal failure not receiving dialysis compared to the subjective report of decrease urine output.

Results/Discussion:

Interpreting the characteristics/epidemiology of these patients would be much improved if we knew the baseline characteristics of all patients that presented to the ED during the data collection period. Much of Page 6 Lines 26-50 focus on comparing the rates of dialysis patients to HIC but again it would be much more informative if we knew the baseline rates of these characteristics in the general ED population at the facility.

Minor

General: Check spacing of citations. Not consistent.

Abstract:

Page 1 Line 38 - Would not use term "Elderly" to define >55yo

Page 1 Line 50-51 - The conclusion that their data demonstrated "a substantial need for ED stabilization and emergent dialysis" does not seem justified. We do not have enough information to know when exactly the patients died, how acutely ill they were in the ED and, how emergent vs semi-emergent/urgent they required dialysis.

Background:

Page 2 Line 9-12 - would benefit from a citation here
Methods:


Also, the payment process is important as patients did not receive dialysis and finances seemed to play a role. Important to know how that works at this facility. For example, are they required to pay in advance for certain services? Are all services free of charge to the patient if low income?

Page 3 Line 33-34 - Are the dialysis machines referred to used for inpatients, outpatients, or both? Also, confirm that the they do 80 sessions per day on only 30 patients. Implying many patients are getting multiple per day? Also, unclear why 40 machines are "able" to serve average of 30 instead of just "serve".

Page 3 Line 55-59 - The hours that a researcher was present and the recruitment process need to be defined more clearly. It appears that you had 12 hours of coverage but tried to collect all patients by chart reviewing and identifying patients that came in during the off hours. This however is pretty unclear. Also, please clarify days of the week.

Page 4 Line 43 - "access to dialysis" should be "receipt of dialysis" as the reasoning behind not providing dialysis was not delineated.

Results:

Need to state clearly and early on the lost to follow up rate and how they were handled.

Would be helpful to have some measures of acuity such as vital signs or triage scale (if done).

Discussion:

Page 7 Line 16-17 - Provide range of mortality referred to (ref 4, 18)

Limitations:

Page 7 Line 53-54. Second sentence of this paragraph not necessary.

Lack of outcomes on discharged patients should be listed as limitation.

Also, per above lack of vital signs as measure of stability/acuity.
Ethics Approval

Page 8 - minors assent would be a more appropriate term than consent from parents.

Figure 1 - Generally better if a breakdown of how many patients were excluded for each exclusion criteria (e.g. how many did not consent).

Figure 2 - Not informative and information provided in text. Suggest removal.

Figure 3: The formatting of this chart could be improved and further explanation of at least the Y axis is necessary. Consider (but not necessary), a table instead.

Table 4 - Page 10 Line 24-26 There appears to be an error in the Age Rows -- Alive / Dead columns as they are replicated.

P values are normally listed as <0.001 or something similar as opposed to 0.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review
Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organization that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organization that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal.