Title: Mortality Estimates among Adult Patients with Severe Acute Respiratory Infections from two Sentinel Hospitals in Southern Arizona, United States, 2010-2014

Version: 0 Date: 12 Jul 2017

Reviewer: Amalie Dyda

Reviewer's report:

This paper describes a study linking enhanced hospital surveillance data with death registry data to better describe mortality associated with Severe Acute Respiratory Infections in adults in 2 hospitals, and to describe factors associated with mortality. The authors should be congratulated on an interesting and valuable study with well thought out methods and statistical analysis. I think this will greatly add to the literature given the current scarcity, especially with the majority of current papers focusing on children. However, I believe this paper needs quite a bit of review before it should be recommended for publication.

Overall the aims and rationale need to be made clearer. The language and writing especially need a lot of work. Much of the language is not very precise or clear and needs better structure. I think the abstract could be improved using my specific comments throughout the paper.

Please find my specific comments below:

Background:

There is a lot of information that is not really relevant or needed and some key pieces of information missing.

page 4, line 56- 'morbidity and mortality', globally? in specific populations?

page 4, line 57- 'leading cause' is vague, needs to be more specific with rates or numbers and age groups, preferably in adults given this is the focus of the paper.

page 4, line 58- severe outcomes such as?

page 4, line 59- examples of types of chronic medical conditions that are important in this context

page 4, lines 60-64- quite wordy/lengthy, could be more precise.

page 4, line 65- remove the first sentence of this paragraph. Start with "The 2009 H1N1..."
Page 4, line 73 - remove from 'with the aim of...". not particularly relevant

Page 4, line 77 - This bit jumps around a bit. was the surveillance started because of the BIDS or the WHO recommendations? Or was BIDS based on WHO recommendations? please make clearer

Page 5, line 78-81 - Why did you suspect the mortality data wasn't accurately captured? I don't think the rationale for this study is clearly described.

Methods:

The methods are generally well written. a few comments below. I'm not clear what you did with non-SARI deaths, excluded?

Page 5, line 83 - ethics were not required as....

Page 5, line 88 - strategic is vague. what about it made it strategic?

Page 5, line 90 - need to mention year in the sentence describing weeks.

Page 7, line 126 - how did you decide which to use median or mean for?

Page 7, line 129-133 - could be written more clearly and concisely

Page 7, line 137 - what was the rationale for using the 30 days post admission

Page 8, line 145 - delete most and just say 'Age and race were added as covariates in the final model' and explain how you decided to include, priori? Also you use race and ethnicity throughout, better to be consistent

Page 8, line 50 - not sure what you mean by censored?

Results:

Page 10, line 181 - need to be more consistent throughout the results. numbers and proportions are reported differently for each. Please use '30 (12%, 95% CI 8-15%)' so that proportion is reported with the CI's

Page 10, line 186 - 95% CI's

Page 11, line 200 - please remove worse. perhaps less?

Table 2 - would be good to report race in this table since it was included in the model
Discussion

page 12, line 209- replace predictors with significantly associated. predicted too strong given the evidence available

page 12, line 211-213- remove first 2 sentences of this paragraph.

page 12, line 215- what did other US studies show, please add %. Also what do you mean by high frequency, high compared to what?

page 12, line 215-218- needs rewording to be clearer

page 12, line 220-227- this section is unclear and jumps around. Why is your mortality different? actual difference or different methods?

page 13, line 231- are there limitations comparing CAP with SARI? also please spell out CAP the first time it is used.

page 13, line 232- not sure how mortality at 3.8 years is relevant? is death this long after SARI connected to the actual event?

page 13, line 249- remove from 'HIV infection,' to ref 30. This is not relevant

page 15, line 281- are there any limitations with the linkage? false positives?

page 15, line 285- This paragraph needs to be moved up with the other discussion regarding comparison to the literature

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 am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:
Acceptable

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