Reviewer’s report

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: Maria Ganczak

Reviewer's report:

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The study assesses mortality among adult patients hospitalized with severe acute respiratory infections in Southern Arizona, USA, between 2010-2014.

My comments in detail:

The title is does not precisely cover the content within the study. In addition, "Southern Arizona" should be followed by the name of the country in which the study was conducted.

I would rather write: Mortality estimates among adult patients with severe acute respiratory infections from two sentinel hospitals in Southern Arizona, USA, 2010-2014.

Introduction

The authors discuss various issues, offering many references published in 2003-2008. Adding at least a number of other, up-to-date references to support their theses would be of great value.

In addition, they discuss the estimated number of deaths due to influenza in the US, without mortality rates. In addition, the study was conducted in Arizona. Therefore, providing a potential reader with the relevant numbers regarding mortality rates in this state, to offer comparisons, would be of value.

1. 79 "…to complement existing state-wide surveillance for influenza-like illness." A brief description of existing state-wide surveillance would be of value.
Methods

The terminology and the methods used should be clarified, e.g.

L. 87 "at three strategically selected sentinel sites in Pima County…"

What does "strategically selected" mean? Which criteria were used? Were those three hospitals more co-operative than the others, more available? The authors do not explain how many different hospitals/which types there are in the region in which the study was conducted. Pima County is one of how many counties in Arizona? Why was that very county was selected? In other words, to which extent is the study population representative of the region, of the country? There might be a large generalizability problem.

L. 106. "Results for bacterial cultures were frequently recorded". Why?

For what reason were only patients with SARI tested for viral pathogens? Please, clarify.

This should be also put into the "Limitations" section.

Results

The Results would benefit from a description of the study period.

Discussion

The authors should decide whether to use "United States" or "U.S" and use it consistently in the manuscript.

The abbreviations "TX" and "CAP" are not explained.

1. 214. "Mortality was high in this US population (12%) when compared to other studies of pneumonia in the US…” Pneumonia was not the only cause of death in this study. As the authors state (l. 181) - 12% refers to all-causes mortality. Therefore, such a comparison is not correct. Please, verify.

1. 219. "Most global studies of in-hospital mortality also report lower mortality than our study". Why in-hospital mortality in this study was so high? Please, explain.

1. 220 "McMorrow et al. reported an in-hospital mortality of 6% in those >18 years [25]. In a South African population with a high prevalence of HIV, Cohen et al. reported an in-hospital mortality of 8% in SARI patients aged >25 years [30]. In a study of 91 SARI patients >18 years in Bogotá, Colombia, Remolina et al. reported higher in-hospital mortality of 15% [6]. Similar
to the 21% in-hospital ICU mortality of this analysis, the Intensive Care Global Study on Severe Acute Respiratory Infection reported an in-hospital ICU mortality of 20% [31]. One study of adult SARI patients in central China captured deaths occurring up to 30-days post discharge reported an overall mortality of 4% [32]." The authors should clearly provide the potential reader with numbers of patients in every study they cite, or remove the number of SARI patients from the Remolina et al. study [6].

1. 282. This paragraph should be inserted into the Discussion section.

What are general practical recommendations? A "recommendations" section in the final part of the manuscript would be of value.

References are presented in a sloppy, chaotic way, without any consistency. Some references do not have volume numbers/numbers of pages. Please, correct.


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

No

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

Unable to assess
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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