Reviewer’s report

Title: Rates and Risk Factors Associated with Hospitalization for Pneumonia with ICU Admission among Adults

Version: 0 Date: 13 Aug 2017

Reviewer: Eric Mortensen

Reviewer’s report:

This paper uses data from the vaccine safety datalink project to examine ICU admission after pneumonia for patients hospitalized in 8 separate hospital systems.

Major issues include:

- Why only include 2006-2010 data? More recent data would improve generalizability.

- Additional information such as use of vasopressors would be useful.

- Definition of ventilation is problematic. As illustrated in the paper the authors identified a significant portion of patients who receive assisted ventilation outside of the ICU. This is probably because they are capturing patients receiving BIPAP/CPAP outside the ICU. It would be much more useful to narrow the definition to capture just those who received invasive mechanical ventilation and possibly rescue biped.

- It would be much more useful to identify specific comorbidities rather than number of comorbidities in their analyses. For example, metastatic cancer is not equivalent to hypertension.

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?
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I am able to assess the statistics

Quality of written English
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Acceptable

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