Reviewer's report

Title: Comparing Estimates of Influenza-Associated Hospitalization and Death among Adults with Congestive Heart Failure Based on how Influenza Season is Defined

Version: 1 Date: 9 June 2007

Reviewer: marie R GRIFFIN

Reviewer's report:

General
This analysis shows the increase in morbidity and mortality the occurs each year during winter, coincident with influenza circulation. The authors compare 4 different definitions of influenza season. A major problem is that there is no "gold standard" for influenza morbidity and mortality to judge which definition may give more accurate results. In addition, they don't attempt to control for other winter respiratory viruses such as RSV. It should not be surprising that using varying lengths of influenza season should change the hazard ratios. The authors don't discuss how their changing definitions also change the reference (non influenza period), so that the longer the season, the more likely that the comparison period will be dominated by summer months. In order to control for other winter viruses, it would make more sense to compare to other winter months when influenza is not circulating, rather than including the summer in the comparison. In addition, the burden of influenza will be a function of both the length of the season and the hazard ratio. A further analytic step the authors did not take would be to calculate the actual hospitalization or death rate estimated to be "attributable" to influenza. The authors allude to expectations that influenza hospitalizations and deaths should be higher in years with greater circulation of influenza A viruses but show no data to support this. Finally, the authors use US national data, but don't say where the study population comes from -- is it likely that flu seasons were similar for all in this study?

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

the authors discuss other viruses, but make no attempt to account for them. RSV often circulates at the same time as influenza, and the wider the influenza season is defined, the more RSV season is likely to be included. As mentioned above, in this situation, the reference non-influenza season will also be more influenced by summer rates. Using a reference period that includes RSV but not influenza and excludes summer months when respiratory viruses are low would make more sense. A figure that shows the influenza seasons (number of weeks) for each definition each year would be helpful. In addition comparing the burden of estimated influenza in each season, which is a function of the HR plus the length of the season would make much more sense than just comparing HRs.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

describe the study population and their residents and comment on varying flu seasons for participants consider seeing whether a particular definition fits with the known epidemiology of the disease -- that is, lower estimated morbidity in H1N1 or B years

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Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests