Reviewer's report

Title: The impact of pandemic (H1N1) 2009 virus compared with seasonal influenza epidemics on intensive care admissions in New South Wales, Australia, 2007 to 2010: a time series analysis.

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Reviewer: Lin Yang

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The authors used Serfling regression method to estimate excess rates of ICU admissions associated with the 2009 H1N1 pandemic in New South Wales, Australia. They found the ICU excess rates in 2009 were lower than those in 2007, with a different age pattern observed.

Here are some comments to help improve their manuscript:

Major comments
1) Serfling regression has been applied to estimate excess mortality of influenza because it does not require any virology data and is simple to conduct. However, it is well known now that influenza viruses show great year-to-year variations in terms of dominant virus types and severity. Most disease burden studies recently published have adopted Poisson regression models, which can incorporate virology proxy variables, as ref 14. It appears the authors have good-quality virology data during the study period (Figure 1), can they try to fit Poisson models and see whether the results are consistent between these two approaches?

2) It is interesting that the authors tried to compare the media hours and proportion of intensive care admissions where the patient died (Table 4&5) between the 2009 pandemic and seasonal epidemics. But the authors need to be careful to interpret the comparison of these raw numbers as annual variation of influenza severity since there were only a small proportion of ICU admissions truly due to influenza.

Minor comments
1) Table 4. Some descriptive statistics about data variation such as IQR could be added.

2) No need to repeatedly show weekly positive percentage of influenza in Figure 1-3.

3) p8, para4, “in the 2009 epidemic period” shall be “in the 2009 pandemic period”

4) p10, para2, “The experience of 2009 as a severe….“ It seems this sentence is about 2007, a typo?

5) p12, last sentence of para2, are the authors suggesting Serfling method should not be used?
Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.