Reviewer’s report

Title: Age distribution of influenza morbidity and mortality: a comparative analysis between seasonal influenza epidemics and the H1N1 pandemic.

Version: 1 Date: 1 March 2010

Reviewer: Dora Claire Pearce

Reviewer’s report:

General comments: This paper is very topical and identified an important difference between age-related mortality patterns associated with H1N1 pandemic influenza and seasonal influenza, not evident for morbidity, with relevance for implementation of control strategies in future pandemics. The authors utilize available data sources to advantage, and use appropriate methods to conduct a robust statistical analysis, the title of the paper clearly conveying its content. Study objectives are clearly stated, and the discussion and conclusions are insightful and well supported by the data, which is well represented in the figures.

Minor Essential Revisions:
1. Abstract: Please clarify the sentence describing the findings in relation to mortality in the results section of the abstract.

2. Methods: Please describe age categories used in the analysis in the methods section. These appear to differ between data sources in the figures and reporting in the Results section, and it would strengthen the manuscript if the authors discussed likely impacts on comparisons if these do indeed differ.

3. Statistical analysis: Please specify the hypotheses being tested with the Kruskall-Wallis and the Friedman tests, outlining the comparisons being made.

4. Results: Please indicate the statistical tests to which the quoted p-values correspond.

5. Discussion: Paragraph 2; first sentence: for consistency throughout the manuscript it would be preferable to use “ILI” rather than “‘flu-like illness”.

6. Please specify at what age people are considered to be “elderly” in relation to the age patterns for morbidity and mortality in figures 1 and 2.

7. It would be helpful to include a discussion of the possible limitations of the study due to the use of morbidity data based on medical visits for ILI in France versus virologically confirmed cases in the US.

Discretionary revisions:

1. The term “age-standardized measures” may be preferable to “standardized on age measures”.
2. In their discussion, the authors may wish to expand on suggested links between the observed age-related risk of infection, age-to-age contact rates, and published surveys of contacts.

3. Expansion of the discussion to include variation in virulence between the viruses included in the analysis in relation to mortality patterns observed would be relevant to the conclusions drawn from the study.

4. Clarification of what is meant by “inappropriate” immune responses would be of interest.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

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

**Declaration of competing interests:**

I declare that I have no competing interests.