Reviewer's report

**Title:** Validity and timeliness of syndromic influenza surveillance during the autumn/winter wave of A(H1N1) influenza 2009 Results of emergency medical dispatch, ambulance and emergency department data from three European regions

**Version:** 1  **Date:** 22 March 2013

**Reviewer:** Ashley L Fowlkes

**Reviewer's report:**

The authors pose a very interesting solution to the existing issue of finding a unified, sensitive and specific method of conducting syndromic surveillance for influenza in European countries. The use of emergency dispatch data as reported by the calling patients and the use of emergency paramedic data represent potential sources of data, and the authors propose an investigation to establish utility. The analysis ultimately did not support the utility strongly, which is an important contribution to the literature. While first some revision and clarification of the methods from this analysis is needed, the limitations of the analysis should be shared with the surveillance community.

**Major Compulsory Revisions**

1. The authors use only one country’s dispatch data (EMD) without explanation of the limited analysis. If such data is not widely available, then utility is diminished.

2. The authors limited the analysis to only those weeks when influenza was circulating, which undermines the specificity analysis and prevents the establishment of a baseline rate of influenza syndrome dispatches and emergency diagnoses.

3. The authors used very broad and non-specific ICD-9 codes to identify ILI or respiratory syndrome cases, thus the lack of correlation with physician-diagnosed ILI was not surprising. If I understood correctly, this is a limitation of the data available, but clarification on this point is needed.

4. I was unclear as to whether or not the CUSUM aberration detection method was the most appropriate analysis for these data. If the study objective was to establish the utility of additional data sources, other simple analyses would have been much more supportive. For example, was it possible to aggregate data to the week level, then compare the weekly % of calls related to ARI to the weekly % of patients with ILI and % influenza positive in national virologic surveillance? I was not completely convinced that there was any utility in these emergency data, since the only analysis presented was weeks with days flagged as aberrations. By first establishing a correlation in seasonality, further investigation of aberrations would have been more logical and support for these data would have been greater, even though the results did not show strong correlation.
Tables 1 and 2 were helpful in understanding the data sources and methods used in the analysis. It would be very helpful to add some additional clarification to column headings, such as Tables and Figures are insufficiently labeled. I was not able to interpret the nature of the characteristics described in Table 3, nor use the corresponding paragraph in the Results to understand data being presented in the table. Are these average numbers of days per week with data available, average number of days per week with aberrations?

Minor Essential Revisions

1. The article needs editorial review. I could not identify all language or grammatical mistakes, but have noted a few major points:
   a. In the Background, the sentences switch between past and present tense used, and sometimes they are switched within the same sentence.
   b. The abbreviation for example given (“e.g.”) should not be used in the middle of a sentence, but rather after the sentence in parentheses or between commas.
   c. The 1st sentence of the 4th paragraph should be changed to “do not focus” rather than “focus not”.
2. General note, the switching of referring to surveillance locations and systems by country and by state (e.g., Austria and Tyrol) is very confusing for readers unfamiliar with the geography, especially in the case of Cantabria which is never defined as Spain in the methods.
3. The first paragraph of the Results section is actually still a Methods paragraph.

Discretionary Revisions

1. The first paragraph of the Discussion is vague and does not really summarize your findings.

**Level of interest:** An article whose findings are important to those with closely related research interests

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

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests