Reviewer's report

**Title:** Automated data extraction from general practice records in an Australian setting: Comparative analysis of influenza like illness trends in sentinel general practices and emergency departments on a local level

**Version:** 1  **Date:** 13 March 2011

**Reviewer:** Barbara Michiels

**Reviewer's report:**

In general:

The subject of this study, the collection of timely and reliable surveillance data on influenza-like infections, is important to manage adequately upcoming epidemics on national, local and practice level. This study has the potential of providing interesting information on this topic, but fails to provide enough details and sound results. Specific comments on the manuscript are given below.

Following abbreviations are used after every comment:

- Discretionary Revisions (DR) (which are recommendations for improvement but which the author can choose to ignore)
- Minor Essential Revisions (MER) (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
- Major Compulsory Revisions (MCR)(which the author must respond to before a decision on publication can be reached)

1. Is the question posed by the authors well defined?

In the Aim section the research question is stated by the authors and consists of two elements: 1) testing of the performance of a newly developed automated data extraction tool and 2) comparing the results obtained by applying this tool on a database of routine GP records with emergency department ILI data: I propose that the underscored text is added to the Aim in the manuscript (MER)

2. Are the methods appropriate and well described?

1) Development of the data extraction tool:

a) 2nd paragraph: Case definition of ILI: I am not convinced that the proposed ILI definition consisting of cough and fever and fatigue is sensitive enough to detect all influenza cases, although I understand that this is a National ILI definition used in Australia. Fatigue is a ‘soft’ subjective symptom not always reported by patients or recorded by GPs or other healthcare workers. Although many patients suffering from influenza do complaint from fatigue, it is even not specific for influenza[1]. Other countries are using other definitions most of them containing cough and fever and only differing in the additional signs or symptoms. So why not restricting the definition to cough and fever? (MCR)
b) 2nd paragraph: “Information can be entered into medical records software programs as coded entries via tick boxes or drop down menus or as free text.”: please can you specify what kind of information you are referring to? (MER)

c) Table 1: as a footnote there is mentioned that “Any description of influenza vaccination caused a negative categorization”: it is a pity not to include vaccinated ILI cases because vaccine failure cannot be detected in this way: why this restriction was introduced? (MCR)

2) Testing the extraction tool (Canning Flu Tool):

a) 1st paragraph: “Following refinement of the application…”: what is meant by refinement: what kind of adjustments were there made? (MCR)

b) the paragraph regarding “Sensitivity and specificity” must become part of this section regarding the testing of the tool(MER)

c) this section contains information on data collection, which is not part of testing the tool: I propose an additional heading describing all the details of data collection: description of the GP practices and ED sites, period of collection, description of PHREDSS data collection, etc. (MER)

d) There is no information on the quality assessment of the recorded information by the GPs or EDs healthcare workers(MCR)

3) Comparing trends between GP and ED data:

a) this section contains information regarding the data collection, which is not the same as comparing data. Please replace this information under the data collection heading cfr supra.(MER)

b) I am missing the description of the appropriate methods for comparing the weekly trends generated by the different tools and data sources; no statistical tools were described such as Spearman’s rank correlation coefficient to compare temporal trends (used in the study by Brabazon et al (ref 3); neither the graphical methods and software packages were mentioned (MCR)

4) a) the information under the heading: “Data interpretation” is part of the data collection description.(MER)

b) “When measuring sentinel activity, we used the average percentage of patients with ILI by site rather than the number of ILI cases. This ensured that summary measures were not unduly influenced by the contributions of individual sites.” : I am not sure what is meant by his statement. This is a partial solution because I presume that percentages are measured as number of cases/number of consultations/practice/week (please add this information to this part of the Methods) and that adjustment by means of weighting these percentages on the basis of state population is still lacking.(MCR)

3. Are the data sound?

In general the data reported are not very detailed. No general characteristics of the cases and patient population (gender, age) and no total number of cases/consults/practice or ED/week during the registration period were given.(MCR)
1) testing of the tool: reporting of sensitivity and specificity:
A completed two by two table is missing; the percentages given cannot be recalculated. Please provide us the missing data. (MCR)

2) comparing the GP and ED data: denominators are missing, only the range of absolute case numbers were given, which makes reliable comparison impossible. Only a description on sight of the graphical results is made. No attempt has been made to really estimate the correlation between the two data sources, which is a pity. (MCR)

3) Free text extraction: same remark as supra: no statistical analyses of the differences given. (MCR)

4. Does the manuscript adhere to the relevant standards for reporting and data deposition? The quality of the reporting and data deposition is low: not exceeding description, scarcity in data provided cfr previous remarks (MCR)

5. Are the discussion and conclusions well balanced and adequately supported by the data?
1) The authors conclude that “The tool produced a more robust signal than PHREDSS and is likely to detect increased influenza activity more reliably,”: this study is not evaluating the reliability to detect influenza cases with the new tool. Therefore a comparison with laboratory confirmed cases is needed. Their conclusions are not very sound and only based on a visual impression of graphics. (MCR)

2) The following sentence must be mentioned in the method section: “Feedback to GPs was achieved by giving them access to a password-protected, secure website containing weekly surveillance reports including both practice-specific and area-wide surveillance data and interpretations.” (MER)

3) last paragraph of discussion: please give references for “the United Kingdom and Ireland” (MER)

6. Are limitations of the work clearly stated? No, very few limitations of the study were mentioned by the authors (MCR)

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? Yes, no problem

8. Do the title and abstract accurately convey what has been found?
1) In the title there is stated that a “comparative analysis of influenza like illness trends” will be given, which suggest a thorough comparison and in fact the manuscript only provides a description of ILI curves with a comparison on sight. (MCR)

2) In the abstract the research question (cfr. point 2) is not reflecting adequately the Aim which consists of two distinct elements.
Methods: last sentence: what is meant by “raw ED data”?
Results: “the curve of seasonal ILI was more sensitive”: on what grounds this
statement is made? (MCR)

9. Is the writing acceptable? yes


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

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I declare that I have no competing interests