Reviewer's report

Title: Surveillance of Febrile Patients in a District and Evaluation of Their Spatiotemporal Associations: a Pilot Study

Version: 1 Date: 19 August 2009

Reviewer: Kirsty Hope

Reviewer's report:

Discretionary Revisions: none

Minor Essential Revisions:

1. The stated aims of the paper was not entirely clear “to characterize emergency department visits by studying their spatiotemporal association, and identifying clustering of febrile patients to predict occurrence of possible outbreaks”, however in the methods section they extend this to “examine the feasibility of establishing a surveillance system for informing impending infectious disease outbreaks”.

The study did characterise those ED visits with fever who were admitted to hospital by looking at their spatiotemporal association, not all ED visits which is suggested by the aim. The study also explored the feasibility of using fever as an indicator of infection, with 47.2% of those presenting with a fever being diagnosed with an infection on initial visit to ED, of those not presenting with a fever 7.8% were diagnosed with an infection on initial visit to ED. This also was not covered in the aims.

2. At the end I am left wondering how this system would complement and add value to existing surveillance systems, and how or even if it’s possible to automate the system. In addition the discussion highlights the usefulness in identifying outbreak in RCHEs, however there was no or little discussion on use in identifying community outbreaks not associated with RCHEs. There was also no discussion on the limitations of using a patient residential address i.e. would miss outbreaks associated with schools, child care etc.

3. The authors indicate that to “their knowledge this is the first study to examine the spatiotemporal associations of patients attending an emergency department to predict the possible occurrence of infectious disease outbreaks in the community.” However there has been lots of work done mainly in the US relating to exploring the feasibility of space-time analysis on syndromic data. Many of the studies have been done on other data sources such as primary care data, nurse hot-line data etc but there has been some work done using Emergency Department data. A starting point would be to review Martin Kulldorf’s work. The authors should include more discussion concerning other work and how their results compare.
4. In the methods section the authors state they obtained specific data for each patient-episode, in the discussion they state a limitation of the system is it was not automated. Did the authors manually collect the information from the ED database or from individual patient charts etc.

5. The second paragraph in the results refers to table 1 and 2; I could only find 1 table.

6. The authors refer to residents of RCHEs as “inmates” a more appropriate word should be used to residents of age care facilities.

7. In discussion paragraph two in talks about two important findings, however only one is clearly labelled “Firstly, among the 40 cluster…”, there is no second.

8. The authors state that an important finding was that the system could identify possible outbreaks in RCHEs. The authors could also include a brief discussion on how the health system is usually notified of an outbreak in an RCHE or if they are notified at all and a measure of how many outbreaks would occur in RCHEs each year if it is known.

9. Figure 1: The text on the figure should be reviewed as I could not clearly read it.

10. Table 1 includes comparison of fever and non-fever ED visits and also patient with clusters and patients from non-cluster. However the results from this analysis are not mentioned anywhere in Results section or Discussion. I am left wondering why this was done i.e. how it fits into aims and how the results affected the outcome.

Major compulsory Revisions: None

**Level of interest:** An article of limited interest

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

**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