Reviewer's report

Title: A context model to prioritize drug safety alerts in CPOE systems: Development and first validation

Version: 2 Date: 11 March 2011

Reviewer: Andrew Georgiou

Reviewer's report:

Major compulsory revisions:

The paper is interesting, well presented and thoughtfully structured. Its subject material is important and significant. The Introduction of the paper presents a sophisticated and interesting overview of the major issues involved.

i) Page 1 – the authors make mention of “medication errors” and ADEs. However, the words are interspersed and the difference is not clearly defined. The authors provide a definition of an ADE and explain that ADEs associated with a medication error are considered to be preventable. The last paragraph of the page says that CPOE systems can reduce medication errors as well as ADEs. This leaves the reader somewhat confused. Are the two concepts the same thing? Is one a subset of the other? This appears to be an important distinction that needs to be clarified early.

ii) Page 3 in paragraph 3 the paper mentions “partly context-sensitive CDS systems”. This description invites confusion and seems like an ill-chosen choice of words. What is a “partly context-sensitive” system? Is there a scale or classification of context sensitivity? Does this suggest that we can have fully context-sensitive system? Given that the paper is aiming to identify factors that can be used to prioritise and present alerts on context, I would like the authors to be a little more precise in their terminology.

iii) The model is interesting and potentially very valuable. The individual factors that make up the model are also well described. Clearly the authors have achieved the main part of their aim. Despite this I found the Discussion section of the paper somewhat lacking. I believe this is because the concept of a “context model” invites the expectation that we can expect more than just a listing of factors but their synthesis into something (a model) that can help explain, understand and guide future work. The authors actually do provide such a synthesis as evidenced by Table 3. The Discussion could be strengthened by discussing the “model” a little more, drawing attention to its distinguishing features and addressing the model in relation to how other research has approached the subject of models, context and safety. This would position this interesting and important piece of work alongside some similar developments currently being undertaken in the area of patient safety by the World Health Organization’s World Alliance for Patient Safety.
Minor essential revisions:

There are some places in the manuscript where concepts need to be defined better. There are also occasional problems with the expression and logical flow of the argument.

a) Page 1 we are told that “Medication errors have been identified to be a common type of medical errors early on.” The problem with expression here is that “medication errors” is plural and “a common type” is singular. However, I am not sure what “early on” means. Is early on sometime in the early twentieth century or are we referring to the time of Seneca the Elder?

b) Page 2 – the first paragraph says that drug-drug interactions checking suffers from low specificity. I believe the authors need to explain this concept and how it relates to the point that CDS-triggered warnings are frequently overridden. Otherwise it reads like a non-sequitur.

c) Page 10, paragraph 2 – The statement that van der Sijs “also warned for turning off alerts” is not clear. Do the authors mean “also warned about turning off alerts”?

Discretionary revisions:

1. Page 4, paragraph 4: Can the authors tell us if the “ten major magazines in the field of health informatics” are peer-reviewed?

Level of interest: An article of importance in its field

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.