Reviewer's report

Title: Evaluation of PROforma as a language for implementing medical guidelines in a practical context.

Version: 1 Date: 17 December 2005

Reviewer: J. F. Arocha

Reviewer's report:

General
The paper presents an evaluation of some aspects of PROforma as a language for representing clinical guidelines. The evaluation was carried out in the context of a system for the monitoring and assessment of hypertensive patients. The patients' blood pressure measurements are done at the pharmacy and the system provides recommendations for monitoring or change in medications, which are sent to the patients' primary care physicians. The study looked at the evaluation of PROforma in the knowledge acquisition, analysis, design and implementation aspects.

There has been an increased interest in languages for implementing clinical guidelines. Several studies of guideline representation languages have been published in the literature, including those of Peleg et al (2003), LeClerq et al (2004), and Chu (2005). All of these papers, however, have taken a comparative approach and focus on analyzing how the different formalisms, such as GLIF, the Arden syntax, or PROforma can be used to represent guidelines. The reviewed paper by Sutton et al takes a different approach: that of examining how PROforma meet several criteria of knowledge engineering principles, using a case study approach.

The authors make use of knowledge engineering principles of logical adequacy, heuristic power, notational convenience and explanation support that PROforma allows. The authors found that although PROforma was adequate for implementing clinical guidelines in the context investigated, they found that it lacking in its notational convenience as a language for model creation in the knowledge acquisition and analysis phases of the project.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

The paper tries to answer the question of the adequacy of PROforma as a language for expressing clinical practice guidelines by asking the extent to which the language meets knowledge engineering principles, in particular those relevant to knowledge representation. The focus is on how PROforma language serves to express a description of medical process involved in an application (hypertensive patient monitoring).

On the positive side, I would say that the approach taken of determining how PROforma meets the KA principles is interesting, as it provides a standard for comparison. In the context of medical informatics, such an approach is novel. Also, the description is generally clear and I believe well justified, from the theretical point of view.

I would say that the major problem I have with the paper is that it is highly abstract, which makes it difficult to determine how the different PROforma "functionalities" examined were evaluated. Although the title of the paper hints at an "evaluation in a practical context," the description remains highly abstract and does not tie to actual application of the system.
I think that this can be remedied by providing more concrete examples, for instance, of the strengths and weaknesses of the system. The authors describe some examples, but given that the study was done within the specific application of hypertensive patient monitoring, more illustrative examples would help the reader actually understand better the consequences of such strengths and weaknesses or other characteristics examined.

Special attention should be given in the Methods section to provide a more explicit description of how PROforma was evaluated. What methods were used? How were the methods applied?

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Figure captions are uninformative. A longer description of the diagrams would help understanding of the described processes.

Discretionary Revisions (which the author can choose to ignore)

None

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests.