Reviewer's report

Title: A study of diverse clinical decision support rule authoring environments and requirements for integration

Version: 3 Date: 22 July 2012

Reviewer: Beatriz Pérez

Reviewer's report:

Overall evaluation and recommendation

The manuscript targets somehow an interesting topic of relevance to the field of the journal. In general, the paper is well written but I personally think that it could have been better organized. From my point of view, authors would need to structure the paper in such a way that the Results section would present major findings including the limitations of the RAEs, and the Discussion section would be devoted to place the results in context, presenting their proposed set of requirements and key functions needed to be supported for a successful integrated RAE. Additionally it would address, as they do in the current version, study limitations.

Additionally, although the considered RAEs are particular to Partners Healthcare, it would be of great interest that the authors would generalize such findings comparing them at least with some standardized approach.

My personal recommendation is that authors should prepare a major revision for a second review, structuring and distinguishing, in a clear way, results from discussion and contribution.

Major Compulsory Revisions

1. Related work.

The authors present related work about computer-interpretable models for the management of guidelines (such as GLIF, Asbru, PROforma, GLARE, etc.) and note Arden rule-authoring environment as an attempt to standardize rule authoring tools. As they admit, a major limitation of their analysis is the consideration of particular RAEs used across the Partners Healthcare and, continue saying that they cannot give a generalization of their results to other institutions because of the wide variety of systems. Nevertheless, I consider that it would be of interest for the reader to identify the similarities and differences between the considered Partners' RAEs and, at least, the proposed standardization.

2. Description of the RAEs considered in the analysis

On the other hand, I also think that the paper should be enhanced by including in
Subsection “Diversity and Unique Features of the Rule Authoring Environments”
a description of the Medication Rule Editors, as they do with the Reminder Rule
Editors, so that the reader can have a general idea of the main characteristics of
such RAEs.

3. Contributions of the paper

In addition to present the RAEs and their limitations, authors give their own
proposal for the requirements a successful integrated RAE would have to
include. Such requirements are useful and intuitive, but it seems that they are
presented only by means of Table 2, for which they do not include any
explanation. Later, in the Discussion Section, some of the identified key functions
are related to some aspects identified in the previous Table 2 (reporting,
terminology integration, testing…). Are the requirements related to the key
functions that need to be supported by RAEs? if it is the case, why do the
authors not present such requirements and functions together? Perhaps they
could present them together as an only approach. I think that there is a bit of
mess among the identified requirements and functions. Authors would have to
rewrite it.

On the other hand, Figure 4 seems to be out of place. I was expecting to found a
description of the key functions leaning on this figure all along the section. If
authors want to use such a figure, it would have to be used to support their key
functions’ proposal.

Minor Essential Revisions

4. Figures

I think that the explanation of Figures 2 and 3 would have to be included within
the corresponding section, or in an appendix. As I have said previously, Figure 4
needs further explanation.

5. Language.

I have found spelling errors the authors would have to correct. For example,
“Sharhar et al [5]” instead of “Sharhar et al [5]”, or “GLIF [8]” instead of “GLIF,[8]”,
definitely, they have to take care of the written.


I have missed a RxNorm and HL7 reference, excluding this, the manuscript
contains sufficient and appropriate references.

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

Quality of written English: Acceptable

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.