Response to reviewers of AMIA-0745-A2011 - Paper
SNOMED CT Revisions and Coded Data Repositories: When to Upgrade?
Author: W. Ceusters

Decision: Accept/Proceedings

Reviewer: 1

The author presents in this paper the initial results in the study of the evolution of SNOMED-CT. The objective of the long term research described in this paper is to develop methods for supporting decision making processes concerning the upgrade to a new version of SNOMED-CT as support terminology for a particular clinical information system.

→ That is correct

The author pursues the identification of signs and evidence of improvement or problems along the evolution of SNOMED-CT. In this paper, the author decide study the evolution of a series of versions by using two factors: information content and suspicious events.

→ That is correct.

In fact, it seems that the original experimental design included only the calculation of the information content of the terms and the version of SNOMED-CT but, in a positive sign of the analytical skills of the author, the fact that some concepts appeared in some versions in the transitive closure of a particular concept required further study because of the meaning of such situations.

→ That is correct. I did not expect to find such discrepancies - it made me wonder why SNOMED CT authors do not check for this - but as soon as I discovered it, judged it worthwhile to explore this further.

The results are too theoretical …

→ Theory formation is part of a scientific enterprise and the AMIA Conference still claims to be a scientific conference. I do agree that, unfortunately, this is less the case than it used to be and if this downhill slide continues, I must reconsider whether the AMIA Conference is an appropriate vehicle for fundamental research of this sort even when it tries to answer practical questions as the one posed in the title.

… and preliminary, even though a bunch of experiments have been run and interesting data have been collected.

→ The purpose is to solicit feedback and more ideas from peers, another goal of scientific conferences, I believe.

If the author wants to use the information content as guide for recommending upgrades, that factor should be used in combination with other more related to the quality of the content.

→ Excellent suggestion!!! I added quality computations based on our previous work to this paper and used it to demonstrate how they correlate remarkably.

The degree of evolution of a particular concept over a series of versions should also be considered, since the stability of a concept might also be an indicator.

→ This is exactly what I did as witnessed by tables 1 and 3. I made this point more clear in the final version.

Moreover, the type of changes should be studied too, they should be at least as important as the information content.

→ That has been done extensively as other parts of the grant through which this work is funded and has, for instance, been published in AMIA 2010. But I agree that the paper here would benefit from mentioning this and so I did.

In addition to this, the author does not explain how these indicators should be used in a practical way.

→ I tried in this final version to be more clear be introducing specific strategies and comparing them with post-hoc quality assessments.

It seems like there is so much work to do, although I think this paper could bring an interesting discussion in the conference.

→ I agree.

Reviewer: 2
This paper proposes a method based on information content for analyzing differences between versions of SNOMED CT. In addition to providing a global score, this methods supports the identification of "suspicious events", flagged for quality assurance purposes. This paper is interesting and timely, when use of SNOMED CT in EHRs is expected to increase in the next few years.

→ That is correct

Although information content is not novel, its use in the context of terminology evolution is original.

→ The way in which I defined information content here is novel too, but I did apparently not elaborate enough on how it is different from other approaches. That is now corrected in the first paragraph of the discussion.

Overall, this experiment is a very nice academic exercise and is certainly worth sharing with the AMIA community.

→ I agree.

As acknowledged by the author, however, the limitations (technical requirements, need for further review) are serious and restrict the practical significance of this work.

→ The limitations restrict it for now, but technology is catching up. I added a remark to this effect.

Moreover, in the regulatory context of the "meaningful use", users will not likely have the choice to select which version of SNOMED CT they want to use.

→ But thinking out of the box: those who impose the meaningful use criteria might run these tests before they force a new version to be used. I added this suggestion to the paper.

Most likely also some of the corrections in the latest version will warrant the upgrade, especially corrections pertaining to liability issues in the context of clinical decision support.

→ I do not understand the last point made here, but the issue of 'corrections' which we found not always to be corrections but rather mistakes, is more explicitly discussed in the new version.

The paper would be stronger if these aspects of the use of SNOMED CT were acknowledged and discussed.

→ Very good suggestions which I followed indeed.

Finally, some significance could be gained if the authors could outline the use of this method not by end users or even vendors of EHR systems, but but the developers of SNOMED CT (applied prospectively to a version before it is released for quality assurance purposes).

→ Absolutely. I suggested so.

Reviewer: 3
This paper discusses benefits and possible drawbacks of upgrading version in SNOMED CT terminology. Many experiments are performed using a set of concepts, for studying the evolution of the terminoloy. Methods and results sections are brief, but figures and tables completes well these sections, and the paper is clear enough

→ Thanks. We improved it nevertheless on the basis of the other reviewers' comments.