Reviewer’s report

Title: A Pipeline To Extract Drug-Adverse Event Pairs From Multiple Data Sources

Version: 4 Date: 7 January 2014

Reviewer: Luca Toldo

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Major Compulsory Revisions

1.
From the response to reviews, authors claim to report the performance of TPX entity tagging in complete TPX paper. However that paper is not yet published nor accepted and as such their conclusions cannot be trusted. Without a published paper on their entity tagging performance, or lack of evidence in the submitted paper, that part of the work cannot be trusted.

2.
In the discussion section, authors express their interest in applying BCPNN in comparison to other statistical techniques like MGPS or PRR. They must also consider and discuss advantages of using statistical measures in comparison to linguistic techniques like grammar-based or pattern-based relation extraction techniques.

3.
I wonder why SIDER was not used as structured data source. Authors cite SIDER but never used it in the actual work. They must justify in the article why SIDER was not used although it is considered as important and valuable resource for side effect information.

4.
Currently, the article describes the good capabilities of their text mining framework. Entity tagging, co-occurrence finding, stats based side effect detection and so-forth. Grey zones should be discussed as well. For instance, false negative or false positive tagging of TPX and shortcomings observed when using statistical measure for side effect identification. Additionally, shed light on what can be done in order to overcome those drawbacks.

5.
When using blog posts for text mining, one has to be careful about spam. Authors should discuss about spam filtering in the discussion or future work. Why was spam filtering not considered and would that add value to your workflow?

6.
In the future work or discussion, authors should also consider validating the results by medical or PV experts. Since the event dictionary has been generated based on string matching between Meddra and TPX dictionary, different terms could still medically indicate same condition. For example in table 2, "major depression"# and "depression"# reads like 2 different terms. Medically do they mean different conditions or a condition with known and unknown intensities respectively?

7.

Finally, this paper completely ignores the wealth of work published by Gurulingappa H et al in 2012 and 2013 on automatic extraction of advers drug events from MEDLINE and the comparison against SIDER etc..

Pharmacoepid Drug Saf 2013 (PMID:23935003)
J Biomed Sem 2012 (PMID:23256479)
J Biomed Inform 2012 (PMID:22554702)

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests