Reviewer’s report

Title: Combining Classifiers for Robust PICO Element Detection

Version: 2 Date: 16 February 2010

Reviewer: Mary Klem

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General: The aim of this study was to explore the ability of multiple classifiers to detect PICO elements contained in PubMed abstracts. This is an interesting paper with some useful results.

Major Compulsory Revisions

On page 4, the sentence beginning “Their method has obtained average results” is confusing – is this referring to Demner-Fushman and Lin, or work by Aronson?

The authors criticize Demner-Fushman and Lin for failing to calculate f-measures. However, it’s my understanding that use of f-measure is primarily useful in cases where training data are unbalanced. Was this true with Demner-Fush, or is there another reason calculation of the f-measures was necessary?

Page 5: How were structured abstracts “automatically” selected from the 260,000 abstracts initially downloaded from PubMed? Also in this paragraph, the sentence beginning “As both Intervention and Comparison elements belong to the same semantic group of exposures…” is very unclear. I was not sure what the authors meant by this and its implications for the data sets that were created.

Page 7: Is it true that the MLP achieved the best f-measure scores? Examination of table 4 seems to suggest that F3 had highest f-measure for all three elements.

Table 5 is never referred to in the text.

Minor Essential Revisions

Minor editing to enhance consistent use of verb tenses would be helpful.

Discretionary Revisions

Authors collapse Intervention and Comparison elements into “exposure” but continue to refer to Intervention element throughout the manuscript. It may be less confusing to consistently refer to an Exposure element (E element).

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

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.