Reviewer’s report

Title: An open access medical knowledge base for community driven diagnostic decision support system development

Version: 0 Date: 29 Aug 2018

Reviewer: Carlos Luis Sánchez Bocanegra

Reviewer's report:

The reviewer would like to all authors who kindly and wholeheartedly wrote the manuscript and provided interesting paper, nevertheless it has many facts that we need a serious consideration. Below, we address all details. I hope that the manuscript will meet a success publication.

The paper is focused over 2000 ICD-10, 450 medications and 8000 observations in SNOMED and LOINC terms at 117 medical cases. You propose a successfully knowledge base for a new medical diagnostic assistants.

You develop a first prototype "Doknosis as a differential diagnosis application to parse and visualize feedback from a database” and compare with DXplain and Isabel.

Let's see my questions:

Major corrections:

- You told about SNOMED, LOINC and Rx-Norm but you need to consider the background papers around those topics. Why don't you consider health ontologies and semantic terms instead of 'terms'?

- You mention "DSS need to support the incremental nature of the diagnostic process". That could be the essence of the background, you should make a deeper explanation. e.g., why DDSS need that support? What is the meaning of "the incremental nature of the diagnostic process mean”?

- Authors need to consider what happened behind those terms. As an example, the use of ontologies on health sector, it seems to be all in good conditions and I should a deeper review of the background: e.g.: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2211452/
- Dataset extraction: Which diseases did you work? I think your paper need to consider that every disease has its own peculiarity and details.

- Evaluation procedure: I should recommend a second statistic study please check https://www.sciencedirect.com/science/article/pii/S1071581985710816

- I think you need a limitation section. Disease are so much different to treat as one DSSS, I think we need to consider how to combine the study independently by the disease.

Minor corrections:

- What is the meaning of DSS, AI, ML, ML-based, knowledge-based? Think you need to understand for everybody. Please with a soft definition of each term. Please try to use only one acronym to avoid any confusion (ML or ML-based?)

- I think you found a reference lost "Error! Reference source not found". I hope it could be for the Figure 1?

Are the methods appropriate and well described?  
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?  
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?  
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?  
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

Quality of written English  
Please indicate the quality of language in the manuscript:
Acceptable

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