

## Response to reviewers of the paper

Business Rules to Improve Secondary Data Use of Electronic Healthcare Systems

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We are pleased to inform you that your Paper for presentation, entitled Business Rules to Improve Secondary Data Use of Electronic Healthcare Systems (Id=151), has been provisionally accepted for presentation at Informatics for Health 2017 in Manchester, UK.

For final acceptance, it is important that you:

- submit a final version of your paper, addressing any issues raised by the reviewers, in MS Word format, no later than February 10th.
- register and have payment confirmed by February 24th, the early bird registration deadline.

We're looking forward to seeing you in Manchester in April.

The SPC of Informatics for Health.

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### **Review comments:**

Strong accepted as Paper for presentation

### **Reviewer 1:**

In this paper, authors investigated the issues related to secondary use of EHR data with this hypothesis that there is a mismatch between intended purposes of data gathering in EHR (primary use) and intended purpose of secondary uses. They tried to identify some business rules to fill this gap.

1- Why did you select and analyze these 19 secondary data requests for your analysis.

- The collection of data requests was based solely on the availability of formal applications for secondary data usage. Initial requests are received by email through a request portal, that forwards the request to our director of research where he reviews and analyzes the request. We clarified this in the paper by replacing the original sentence '*For the work presented here, we analyzed the last 19 secondary use data requests received (Table 1) in function of the problems IHI staff encountered to deliver the data at the level of precision and quality expected by the researchers*'. With the sentence: '*For the work presented here,*

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*we analyzed the last 19 secondary use data requests received (Table 1) to obtain more insight in the type of problems IHI staff encountered to deliver the data at the level of precision and quality expected by the researchers’.*

2- What was the data gathering and analysis technique used for this research (questionnaire? Interview?)

→ The procedure for addressing data research requests is as follows: the director of research will interview the requestor utilizing email, phone, and in-person interviews to ascertain the specificity of the criteria required for the secondary analysis. Based on the particular area of expertise required to formulate query parameters, expert staff may be interviewed to better formulate the query. This entails but not limited to, database administrators, extract transform & load technicians and clinical experts. The resulting documents were then studied using Qualitative Comparative Analysis. Explaining this is not possible within the page limits for this publication, but we provided a reference. We replaced the sentence ‘*Analyses involved the entire process consisting of (1) the initial – typically vague – data request, ...*’ with ‘*A qualitative comparative analysis [8] was performed on the document trail (emails, meeting summaries, ...) that resulted from the entire process consisting of (1) the initial – typically vague – data request, ...*’.

3- There is little information from literature in the discussion (compare your results with other researchers in this regard)

→ We added a paragraph to this effect at the end of the discussion section.

**Reviewer 2:**

Business rule could play a significant role in enhancing data quality and usefulness. The paper justified this role and presented the cases for secondary data use. However, how business rules are derived and more comprehensive list of business rule may shed more light towards better utilization of secondary data use

→ We agree with this reviewer, but unfortunately, space limits prevent us to do so. Supplementary data will be provided in the presentation. The nature of business rules is that of an iterative process that requires various revisions based on restrictions extending from the secondary data use projects. As formulated, the business rules will be added to a more comprehensive list of business rules that could be employed to improve the usability of data for secondary use by the extension of improvement of data quality.