Reviewer’s report

Title: Benchmarking of hospital information systems: Monitoring of discharge letters and scheduling can reveal heterogeneities and time trends

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Reviewer: Elske Ammenwerth

Reviewer’s report:

Benchmarking of hospital information systems (HIS) is an increasingly important aspect in health care IT practice. It is important that researchers develop and assess new methods and tools for HIS benchmarking.

The paper presents an example of benchmarking: based on an automatic HIS database analysis, the time needed to finalize discharge letters as well as the usage of online scheduling (by counting the number of scheduled appointments per month). The authors analyse also the differences between departements as well as trends over the analysed period of 7/2007 - 6/2007.

While the topic is therefore of interest for readers, there are some questions the paper does not sufficiently answer.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Overall, the paper is focused on methods and results. The introduction section remains somewhat general. The following questions are not or not sufficiently addressed in introduction:

1. What is the relation between structure, process and outcome quality of HIS? How is this related to the discussion of success and failure criteria? Why do the authors chose the criteria they finally used? Why is benchmarking important at all?

2. What is the state of the art of HIS benchmarking? What do others propose here? How is the approach of the authors different/new/better from other approaches?

3. What is the scientific problem the paper wants to solve, what is the scientific question(s)/the scientific objective they want to answer?

The discussion session focusses on the heterogeneity of departements, presenting "organizational issues" and some technical aspects as reasons. They then discuss the benefit of benchmarking, stating that this helps to "elucidate options for improvement activities", and that in fact their results readily to "various projects to improve patient scheduling". While those statements are not wrong, they seem a bit general and not really surprising. Overall, it would be better if the
discussion section focuses more strongly on other questions such as:
4. Do the results conflict with other research? If yes, what could be the reasons?
5. How can benchmarking of the HIS usage contribute to improve process and outcome quality?
6. What are limitations of the methods and results presented by the authors?
7. "So what" - what can the reader learn from the paper? What is the scientific innovativeness that is presented? What is new and challenging?

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
1. The summary does not mention the scientific objectives of the paper.
2. The papers cited in the introduction seem not always to be the best choice. Just one example: The authors say that "success factors are important ...", but cite a specific paper that deals with success factors for CPOE. Aren't there more appropriate general paper on IT success factors? Same is true for many of the other references used.
3. The term benchmarking is not defined and explained.
4. In the methods section, the duration of time period of the analysis is not given.
5. Why does the discussion mention CPOE evaluation studies as important evaluation studies? What does this have to do with the topic of the paper?
6. Figure 1 - 6 are not completely clear to me. Each bullet seems to be one discharge letter (this should be mentioned), but besides that, I do not understand how they are developed and what they really mean. How comes that completeness is rising from letter to letter?

What next?: Reject because scientifically unsound

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

Quality of written English: Acceptable

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'