Reviewer's report

Title: Application of biomedical informatics to chronic pediatric diseases: A systematic review

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Reviewer: Farah Magrabi

Reviewer's report:

Overall, this is a well-written paper describing a systematic review of informatics applications to support pediatric chronic disease management. The review covers twenty-seven studies published between 1985-2008. In this respect the authors have done well to undertake a systematic review of informatics applications specifically to manage chronic disease in children as there are no previous systematic reviews on this subject.

Comments to strengthen this paper are as follows:

Major Compulsory Revisions

1. Can the authors provide a rationale for a systematic review of a broad range of biomedical informatics applications for physical as well as mental conditions? How valuable is such a review given the heterogeneity of chronic disease and the diversity in models of care that can be supported by biomedical informatics applications.

2. In the background, please show how this paper builds upon the 2007 JAMIA reviews of informatics systems for chronic disease and home telemonitoring which have both been acknowledged. In particular the following statement on pg. 4 needs to be clarified: “previous systematic reviews of adult chronic disease have examined the effect of medical informatics applications such as home tele-monitoring (8), and information systems (2)”. Indeed, 86% of the studies reviewed in this paper were undertaken in an out-patient setting. Also, what is the difference between “web or computer-based information and communication technology” reviewed here and the informatics systems reviewed by Dorr et. al. (2007)?

3. In Table 1, suggest including the primary users, study duration, primary outcome variable and results for each of the studies reviewed. This will make it easier for readers to understand the findings presented in the results section.

4. In the results section, can the authors include results of the analyses used to examine methodological adequacy described in the methods section on pg. 5?

5. Please provide overall descriptive statistics of the characteristics of the studies reviewed i.e. primary users, study duration etc.

6. In the discussion, please make comparisons with existing literature where
relevant. For example, compare results the asthma related studies with previous reviews of asthma interventions.

Minor Essential Revisions

6. In the abstract, please include main quantitative results of the review.
7. In Figure 1, include exclusion criteria to show readers how studies were selected.

Discretionary Revisions

**Level of interest:** An article of limited interest

**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