Reviewer’s report

Title: Using Informatics Tools to Assess the Care and Outcomes of Patients with Respiratory Tract Infections Visiting a Rural Kenyan Health Centre

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Reviewer: Dominik Aronsky

Reviewer’s report:

General

This study describes the use of PDAs for the home-based follow-up of patients with respiratory infections. The health center’s electronic medical record was adapted and refined to capture data related to respiratory complaints. A patient cohort of 433 was included in the follow-up outcome assessment at days 7 and 30. The PDA demonstrated to be a valuable instrument in this challenging health care environment.

The study pursues an important and refreshing approach through the use of PDAs in a resource-constrained setting. The study has several interesting aspects and represents a good example how creative solutions in severely resource-constrained health care environments can benefit a motivated and enthusiastic research team in providing the infrastructure for delivering clinical care and performing research. The paper is well written and easy to follow. It includes 20 references, 5 figures, and 2 tables.

General comments:

It would be beneficial if the paper would have a more detailed focus on the technical feasibility aspects of using PDAs, i.e., how does informatics enable follow-up for patients in this environment; what are the advantages and disadvantages. In its current form, the paper has a combination of clinical and informatics components and lacks detail in either aspect. The goal of the study should be clearly stated, i.e., is the PDA intended to be used for daily routine to support health care professionals in providing follow-up visit or only for research purposes (data collection).

PDAs have advantages and disadvantages for providing care. The authors are encouraged to shortly describe these aspects in the introduction. In the discussion, it would be helpful to report what the experiences of the research team were with respect to these aspects. Several reviews of PDA use have been reported in the literature. In particular, the discussion section may include a paragraph about lessons learned (positive and negative) and report limitations of the study.

Specific comments:

1. The title is too general (e.g., “informatics tools” or “care and outcomes”) and does not describe the content of the paper.

2. Structure of paper: The authors may consider shortening the Introduction and moving description of the MMRS and the setting of the health center to the Methods section. A possible order may include (after the existing first paragraph) (a) general respiratory tract infections; (b) short paragraph describing the availability of MMRS and the need/desire to use the MMRS infrastructure for research purposes and/or follow-up visits using PDAs; (c) PDA characteristics (pros/cons) for clinical care anc
research; (d) purpose of study (define clearly whether for research/data collection purposes and/or for clinical follow-up visits). The methods section can then continue with (a) the clinical setting (“Mosoriot Rural Health Center”) and description of the served population characteristics; (b) the MMRS, and the required modifications of the MMRS to accommodate the PDA infrastructure, (c) information about the study population (subject recruitment, PDA workflow, data variables [a table/list with all collected variables and their categories could be included], study procedures, etc., outcome variables). The recruitment process should be described in detail. Were attempts made to recruit patients on an ongoing basis, during specific days/times, when the research assistant had time, etc.? Also, characteristics about the PDA technical infrastructure may be beneficial, such as battery issues, readability of PDA screen in sunlight, downloading and uploading of patients, backup, any free text data entries, etc.). Why were the PDA data uploaded only once a week? The “subject enrollment” and “data collection” from the result section should be moved into the Methods section. The outcomes of the follow-up visit included data collection about drugs taken, hospitalization, and time away from work (page 9); results from these outcome variables, however, are not reported and should be included.

3. It would be helpful to describe the regular workflow for patients with respiratory complaints and then describe what is different with the PDA. For example it is unclear whether the clinic usually follow-up with patients after their initial visit or was this a unique feature of the study?

4. Results: The study period in the abstract reports Aug 2002 to Nov 2003, whereas the result sections reports the study period being Aug 2002 to Jan 2005. Descriptive statistics should include standard deviation and ranges, where applicable. Drop-out patients (12%) should be described in more detail: at what interval (7 or 30 days) did the patients drop out? It would be good to describe the basic demographic characteristics of drop-out patients (average age, gender, etc.). When did the 4 patients die during the follow-up period? Table 1 should only list study patients, i.e., the diagnosis of 433 patients. As an alternative the Table can list both the underlying population (n=2986) and the study population. Tables need to report the total sample size. Table 2 should include sample size for days 1, 7 and 30. Percentages should be reported consistently (one or no digit after colon). What kind of “further care” did the 11% patients seek?

5. Discussion: As mentioned earlier, a description about pros/cons of using PDA in this setting and lessons learned would be helpful.

6. Figure 2: screen shot should be de-identified.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

Quality of written English: Acceptable
Statistical review: No

Declaration of competing interests:
I declare that I have no competing interests