Author's response to reviews

Title: A global approach to the management of EMR (Electronic Medical Records) of patients with HIV/AIDS in Sub-Saharan Africa: the experience of DREAM Software

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Version: 3 Date: 2 July 2009

Author's response to reviews: see over
**Answers to Referees’ comments.**

**Referee 1**

- On the description of the HIV/AIDS epidemic they should cite factually the recent 'data' from the WHO.

> WHO data concerning the pandemic (with references) have been included in the Background section.

- The Methods section does not really describe the methods used.

> The methods section highlights some aspects of the effort to implement the DREAM software and refers to some key aspects: the architecture of the DREAM centres where the software is used, data management, the difficulties met and solutions proposed and some of the software’s functions.

- The authors should not be discouraged by any strong comments on the article. It is a well researched article and covers many of the relevant issues involved in ICT implementations in resource poor nations. They need to revise its presentation.

> The presentation has been revised in order to make clearer the paper.

**Referee 2**

Minor essential revisions:

1. The bullited statements under "What DREAM" is about" needs to be references. Even though a statement such as "low level of access to health services and poor level of health education" seems to be self-evident, it cannot be stated as a fact without some references to substantiate the claim.

> The 2008 UN Millennium Goals report now has a reference.

2. I am not sure watth CCHC and MCPC involves, although the names are given. I do know what PMTCT involves, so I might be showing my ignorance, but it would be useful to just have a sentence indicating what each programme offers.

> A couple of phrases explaining a little better what is involved in these two programmes has been included.
3. Who owns the central data base? Who has access to it and who may use the data for analysis? This is an ethical issue which needs to be clarified.

*This has been specified at the end of the Data Management section.*

4. The authors refer to "Western standards" with regard to privacy. What specific code or standards were used? I am not aware of a set of standards that is accepted by the whole Western world.

*We have explained that we refer to the European regulations in terms of privacy.*

5. I am not sure whether I understand the inclusion criteria for patients correctly. If all patients living in the catchment area can actually obtain the full range of services, including the medication, surely "Living within a demarcated cathment area" is another inclusion criterium? Formulating it this way would make this clearer, and also be more acceptable ethically. Reading it as it stands makes it look like poor people who did not receive a good education (which would have made them highly skilled) and do not have jobs, are excluded from treatment. Surely this is highly discriminatory. It would be much better if the inclusion is based on these criteria as well as the cathment area.

*In the previous version we said that patients living near the centres have access to therapy. In the new version this has been explained better, by adding another point to the list of types of patients.*

6. In the results section the authors refer to DREAM software being a "reliable tool", but there is no effort that I could see for measuring the reliability or validity of the data entered. Was that done at all? If not, it might be better to refer to an effective tool.

*The term “reliable” has been changed to “effective”.*

Referee 3

Reviewer’s report
Overall, I think this is an interesting paper, describing interesting work, and particularly valuable in that it comes from a group based within Mozambique, rather than an externally funded NGO. Both the use of the English language, and the precision of the ideas are somewhat problematic. The background section does a good job of laying out problems in delivering HIV care both in sub-Saharan Africa, and beyond. See comment 3.3.
In summary I think that the project is fascinating and clearly should be described by a paper of this type, after further revision aimed at more
clearly following guidelines for scientific writing, specifically around the content for each section of the paper.

Major Compulsory Revisions
The author must respond to these before a decision on publication can be reached. For example, additional necessary experiments or controls, statistical mistakes, errors in interpretation.

1.1 - the abstract is not as strong as the paper, and does not reflect its content.
See comments 3.1 and 3.2. The abstract should be rewritten to be a summary of the paper.

The abstract has been revised in order to reflect the article better.

1.2 - Breaking the digital divide - I am not sure from the reviewer’s comments why they removed the term methods from this section, but in an informatics paper of this type I would like to see a technical description of the system. This would include the software platform, the level of effort to develop the system, and discussion around choices made for design and data modeling, a description of how users were involved in the design and any particular design or development methodologies used, and other technical issues.

We reintroduced the term Methods for this section. Some technical notes have been added regarding the software (like the programming language used and the way the final users were involved in planning the software) and the architecture of the centres. Nonetheless we were previously asked not to insist too much on the technical aspects of the software, since the article would be evaluated as Correspondence:

“If you are interested in having the manuscript considered as Correspondence, we would expect you to carry out revisions on the manuscript to remove emphasis from the technical aspects of the software and provide a wider overview of the challenges associated with the project and discuss the lessons learnt from this that could be valuable to other researchers working on similar projects.” (Dr. Iratxe, Editor)

1.3 - some of the software’s features - in using this title for this section, the authors give the impression that they have randomly picked some of the features of the software to describe. It would be better to introduce this section with a list of the features they will discuss and a rationale for choosing those particular features.

We have included a brief explanation of why we have discussed these particular aspects of the software at the beginning of the section.

1.4 - Results - the results section sounds more like a discussion of the experience with DREAM software, and an assessment of the value of specific features based on that experience. This section should include
more of an objective discussion of the experience in deploying the system in such a widespread program, including strategies to deploy the system, strategies for training, the number of deployments, replication of data to a central database in the face of possibly uneven network connectivity, or programmatic variation between countries in the delivery of HIV care and treatment.

Data regarding the versions of the software released, the number of people using the software and the methodology adopted for the training have been included.

**Minor Essential Revisions**
The author can be trusted to make these. For example, missing labels on figures, the wrong use of a term, spelling mistakes.

2.1 - Figures and tables - the figures and tables are excellent, but lack explanatory captions, and (other than Table 1, 2, and Figure 1) references in the text. It is important to address the context for the figures, particularly the architectural drawing, which would address part of my comment in 1.2.

*Done.*

**Discretionary Revisions**
These are recommendations for improvement which the author can choose to ignore. For example clarifications, data that would be useful but not essential.

3.1 - Abstract/Method - does not summarize the methods used in the project, but instead describes the content of the methods section.

3.2 - Abstract/Results - does not summarize the results of the project, except in the most general way.

3.3 - Background - it would be useful to say a little more in the background to indicate in which countries DREAM is used, before the general description of HIV is a problem in sub-Saharan Africa. The introduction could state more clearly the relationship between the DREAM Programme and the DREAM software.

*The abstract has been revised in order to reflect the article better.*

3.4 - Background - if there is any desire on the part of the editors to shorten the overall paper, the description of the DREAM Programme seems longer than necessary if the focus of the paper is on the software. Reading the author’s response to the previous reviewers comment, I understand that this section has been extended, but can only respond to the version I am reviewing. I feel that this is a discretionary revision and it may not make sense in the context of prior review and revision. However, the background comprises approximately half of the paper.

3.5 - comment on interoperability - the authors chose to expand the functionality of DREAM, rather than to build separate interoperable
components to manage pharmacy and clinical data. That is an interesting choice, and the paper might benefit from a discussion of the rationale for that approach, and of its success.

_We considered this issue as a technical aspect, not suitable for a correspondence article._

**3.6 - comment on language - internationalized software can be difficult to write.** The authors did not mention where dream has been implemented or in which languages this been implemented, let alone the strategy for internationalization, which might be interesting.

_We considered this issue as a technical aspect, not suitable for a correspondence article._

**Language revisions**

_The paper has been copiedited by a native English-speaking colleague._