Reviewer's report

Title: Evaluation of the Performance of Routine Information System Management (PRISM) Framework: Evidence from Uganda

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Reviewer: Peter Heywood

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There is little doubt that we need to know more about the performance of health information systems – overall, they perform badly in terms of providing relevant information of adequate quality and timeliness; and the information they contain is little used in health system management in many, if not most, low income countries. Staff in many developing countries must spend significant amounts of time filling in the routine data forms and transmitting them to higher levels of the system knowing full well the information will frequently not be used. At the same time managers of higher levels of the health system are unable or unwilling to revise the system which is the result of additions (but seldom, if ever, deletions) over a long period of time; the content continues to grow irrespective of use. There is little doubt that tools to help evaluate the performance of routine information systems are needed.

Major Compulsory Revisions.

As they review the paper I suggest that the authors address the following points.

HIS evaluation requires that, at a minimum, there is consideration of the content of the system, the extent to which the information could be used at the various levels of the system (i.e. is there the decision space within the individual health system for actual use of the information), whether the information provided is relevant to the actual decision space that exists, whether the information provided is of adequate quality to allow decisions to be made, whether the information arrives on time for a decision that makes a difference to be made, and whether the information is actually used. In many health systems the information on acute infectious diseases is so out of date when it is collated that it cannot be used to intervene in a meaningful way because the epidemic has already peaked and passed; at the same time information on chronic non-communicable diseases such as diabetes and heart disease, often the dominant cause of morbidity and mortality is not available. The problem is that the PRISM framework at the center of this paper concentrates only on the process and does not provide any evaluation of content, its appropriateness at each level of the system, and whether the information can actually be used in a meaningful way. Further, although it is not made explicit in the paper, this system seems to deal with information from the public part of the health system and to ignore the private sector, an increasingly important component of the health system, especially for ambulatory care.
Thus, this paper would benefit greatly from a succinct description of the health system in Uganda, the actual information needed to manage the health system at each level, actual information the health system is providing (and not providing) at each level, the timeliness of the information, the extent to which health system managers and staff at the various levels actually have the scope and resources to make decisions based on the HMIS that they can implement quickly, the quality of the data, and so on. Provision of this context would allow the PRISM approach to be assessed and the performance of the information system to be evaluated.

Beyond this important contextual information, there are some additional issues that need to be clarified.

1. the RHIS performance variable for 2004 is whether charts, graphs etc are displayed at the facility. And there is no assessment of whether the graphs, charts displayed were accurate. I have been in many health facilities in a range of low income countries, most of them had charts, graphs, tables displayed, many of them were out of date and/or inaccurate. I’m not sure that this is a very useful indicator of RHISI performance – at least it needs some justification in this paper.

2. in 2007 there is no assessment of the extent to which questionnaire responses seem to relate to what people actually do (display graphs etc).

3. the paper seems ambivalent on whether there were changes between 2004 and 2007 that might have affected quality. Thus, on pages 13 and 20 it is stated that no significant RHIS strengthening interventions were carried out between the surveys; on pages 15 and 21 it is stated that the training on revised data collection tools might have contributed to changes in quality; then on page 16 it is said to be possible that revision of data collection forms might have given staff the impression that management wanted to improve the culture of information; but the results are said to show a deterioration in data quality between the surveys (p14).

4. the Methods do not actually describe how the staff interviewed were selected – e.g. at random from a staff list or opportunistically.

5. there was a major shift in the composition of the staff interviewed between 2004 and 2007 – in 2004 ‘other’ staff were 45% of respondents whereas in 2007 this category constituted 73%. This is a major change and needs to be taken into account in comparing the two surveys. Is this change in staff category correlated with age and/or sex of the respondent?

6. Table 8 – the footnote to this table refers the reader to Appendix Table 1 which, in turn, has a footnote that says all the indicators of use of information were verified through record review and facility observation. But on page 21 it is stated that the study was not able to assess the completeness of monthly report data due to problems in administration of the survey. The extent of the missing data by variable and level needs to be presented in the paper.

7. in Table 9 the only consistently significant independent variable is having an
RHIS assistant on staff. The dependent variable is display of graphs etc. This is not particularly surprising as this presumably would be part of the job description of that person. But this may have little relationship to the RHSI performance and use (see comment 1 above).

Discretionary Revisions.

An alternative approach to this paper that the authors might wish to consider is to make it a review of the Uganda RHIS in which, after summarizing the health system and describing the RHIS in some detail, they concentrate on the 2007 data to provide an overall assessment of performance.

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.