Reviewer's report

Title: Program level implementation of malaria rapid diagnostic tests (RDTs) use: Outcomes and cost of training health workers at lower level health care facilities in Uganda.

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In this study, the authors report on the implementation of a one-day training on malaria diagnosis using Pf specific RDT for health workers in 21 health facilities in Uganda. Initially 135 health workers were trained and some of these health workers were used to further train health workers at their health facilities. Individuals who scored a >=80% ‘concordance’ using post-training questions were regarded as competent. A follow up evaluation was undertaken six weeks after training to assess health worker performance in the use of RDTs for malaria diagnosis and interpretation of results. The authors report a cost of about 100 USD per person trained with over 80% adherence to the RDT training on follow up and claim that the one day training resulted in 38% reduction in AMD subscriptions or 21 million USD in cost when extrapolated nationwide.

The study design and analysis of the data are fairly simple and correctly done but I have concerns with both the value and interpretation of results.

1. It is not surprising and not particularly interesting that there is a relatively high level of adherence to RDT training procedures only a month or so after training. Instead, follow up after training should have been longer because of importance really is the long term retention of skills and its consequent change in diagnostic and treatment behaviour; the specific characteristics of those who have not adhered to training; the treatment of those who were not positive for malaria vis-a-vis those who were confirmed for malaria.

2. The claim that the training will amount to savings of 21 million USD in saved AMDs is wrong. It is the scale up and use of RDTs rather the training per se that contributes to savings. If one wants to understand the additional savings attributable to training, then one has to evaluate RDT+training vs RDT scale up only. Furthermore any estimates of cost-savings must be balanced against increased responsibilitie to health worker and impact on care for patients and other factors.

3. It is also interesting that the reported concordance rate during training was similar to the adherence rate which makes one wonder why a concordance rate of near 100% was not used during training as the 80% threshold could be low and with skills transfer often deteriorating down the training chain, may have a negative impact when health workers are trained by the ToTs. What was the field
performances of those individuals whose concordance was between 80% to 90% compared to those 90% to 100%. Was clustering in post-training performance? This could be revealing!

4. The cost of training per person appears to be only for those who were formally trained. How about the cost of training by ToTs?

In think this study falls short of being a proper evaluation of the RDT training or a full assessment of impact of RDT scale up on diagnosis and cost savings thus limiting its value. It could be improved by more indepth analysis and interpretation of the data.

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 no competing interest