Reviewer's report

**Title:** Picking up the bill - improving healthcare utilisation in the Democratic Republic of Congo through user fee subsidisation. A before and after study.

**Version:** 2  **Date:** 8 October 2013

**Reviewer:** Catherine Korachais

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* Brief description of the paper *

This paper studies the effect of the program “Access to Health Care” on the volume of consultations in 20 health zones in four provinces in the Dem. Rep. Of Congo (DRC). This program has three components: user-fee subsidisation, drug provision and salary supplements. The evaluation focuses on the user-fee subsidisation (though it takes into account the effect of the two other components). In order to assess the effect of the user fee subsidisation intervention on the volume of consultations, they use an interrupted time-series design (as described in Lagarde 2012) with routine data collected over Jan. 2008-Dec. 2012 on the monthly number of consultations in each health zone first, then all together aggregated. They conclude that user fee subsidisation had positive effects on the volume of consultations, both on the short and long run.

* Major compulsory revisions *

**Program.**

1. A section on how the “Access to Health Care” program works in these zones is clearly missing (should be included between the introduction and the methodology sections). How has it been implemented? On what data is based the user-fee subsidisation, does the health zone have to claim for the reimbursements? Is the drug provision based on the data reported by the health zone, or is it based on expectations made by the NGO? One reason (but not only) why the program design should be clarified is that according to the mechanisms in place, there might be incentives to (over)report service utilisation.

**Data.**

2. As for the population denominator, the authors use extrapolates from the population census of 1984, that is from more than 24 years old data (the program being studied over 2008-2012)! This is a limitation the authors recognize in the discussion; however they don’t really discuss their choice: what other data have been looked for, which were unavailable or unreliable for one or another reason?

**Method.**

3. The three different econometric models for the three different types of health zones should be written down, together with a definition of the variables used.
The hypotheses (what is expected from the coefficients) should also be explained.

4. Same for the aggregate model. Moreover, the strategy being used to aggregate the data should be explained (since the user-fee intervention does not start at the same time according to the health zone, it is not straightforward).

Results.

5. Figure 2 and the related paragraph both report the results from the 16 different econometric regressions as if the coefficients were all significantly different from zero. However, when looking at the regression tables, only 7 out of 16 health zones show significant positive coefficients for the "change in level subsidies", and only one shows a significant positive coefficient for the "change in slope subsidies". The figure is false and the interpretations as well.

6. The results of the aggregate model are also interpreted in a too positively way: while the coefficient related to the change in trend is positive, it is not significantly different from zero (even not at the 20% level).

* Minor essential revisions *

Program.

7. In addition to the section how the "Access to Health Care" program has been implemented, an overview of the other health financing interventions operating in the zones would be appreciated, as the results might be influenced by these other programs.

8. It would also be interesting to add a subsection on the theory of what the authors expect as outputs and outcomes from the user-subsidisation intervention. At least how it should generate an increase in public health facilities utilisation, and how it may not: a short literature review may help.

Data.

9. The regressions' tables 1 to 4 should include the number of observations (since it varies according to the other interventions), the $R^2$, the Durbin-Watson statistic.

10. The authors write they cross-checked the data of some health zones against health facility register, and that it confirms that the report was accurate: for how many health zones and over which period was it done?

11. It is mentioned in the discussion that data reporting has improved over the life of the programme, thus the documentation of utilisation episodes may have progressively increased: this is a limitation that should be mentioned and assessed in the data section.

Method.

12. The very last paragraph of the method section (just before the ethics approval one) is not clear and should be rewritten.

Results.
13. Before running the regressions, some descriptive statistics on the volume of consultations (as well as on other health variables if available) would have been helpful. I would propose to do that on the aggregated data for each year from 2008 to 2012; some insights on the disaggregated data would be nice also (on the 16 health zones separately, or on province-level aggregated data maybe).

14. The meaning of the percent changes is not well-explained: what changes, related/compared to what?

15. While the authors don’t mention the non-significance of the findings for the user-fee subsidisation (the intervention you focus on), they clearly indicate when possible that the findings on the two other interventions (they control for) are not significant at the 5% level. This indicates some lack of objectivity in interpretation (that can be found elsewhere in the paper) which makes the reader cautious about the findings.

16. These two other interventions might not be the only ones in health that have been implemented during the 2008-2012 period. Some concomitant events may also have happened (such as episodes of conflict or displacement, as mentioned by the authors). Yet these other interventions and events might have driven the results. Then this is crucial to provide information about these external interventions/events and their possible influence on the results.

Discussion.

17. In the introduction, it’s said there are qualitative studies. It’s disappointing that the authors don’t use them in the discussion to further interpret the results. This would be great if the ones which complement the econometric findings could be incorporated.

* Discretionary revisions *

Discussion.

18. The direct link the authors make between “salary supplement and free drug provision” and “improving the quality of health services” is not straightforward.

Level of interest: An article of importance in its field

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.