Reviewer's report

Title: Promising outcomes of a national programme for the prevention of mother-to-child HIV transmission; impact of policy changes?: A retrospective study

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Reviewer: Ruslan Malyuta

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The manuscript under review focuses on changes in Addis Ababa PMTCT program after revision of National guidelines and policies in PMTCT. Publication of this manuscript can highlight the importance of universal antenatal testing with opt-out approach. Manuscript also emphasize shortcomings of the existent program and next steps that should be taken – improve uptake of ARV prophylaxis in order to achieve the program impact – reduction of the rate of mother-to-child transmission.

The authors are commended for their efforts in collecting the large amount of retrospective data available from the reports from 10 sub-cities of Addis Ababa for the 5 years period. The data were analyzed and presented, and the manuscript was clearly written.

Below there are several comments after reviewing of the manuscript:

1) Conclusions presented in the summary section are not fully reflect the content of the manuscript. Proposed for review manuscript demonstrates trends in PMTCT service utilization in relation to changing policy (improved uptake of HIV testing, ARV prophylaxis) rather the impact of the PMTCT program (rate of mother-to-child transmission and HIV-free survival of infant).

2) Decline of the HIV prevalence among antenatal attendants from 10.5% in 2004 to 4.6% in 2009 doesn’t seems to be a true decline, but rather a subject to testing policy bias. With selective opt-in testing strategy pregnant women who passed HIV test in 2004 had a greater chance to be HIV positive (more risk factors), compare to pregnant women who were tested in 2009 using opt-in testing strategy. Authors correctly pointed in the discussion section that prevalence in sentinel surveillance ANC sites was different from data received during their study.

3) The used terms should be consistent “HIV positive pregnant women” or “HIV positive women”: (HIV positive women in 2009 were over 18 times (RR 18.5, p<0.0001) more likely to be referred for treatment, care and support than their counterparts in 2004).

4) When presented data about partners it is not clear what is the policy – to offer test to partners of all pregnant women or limit it only to partners of HIV positive pregnant women.
5) When authors presented the trend in reduction of MTCT rate it is unclear why instead of presenting overall MTCT transmission rate (as program outcome) they demonstrated HIV transmission rate from different ARV prophylaxis regimens? From the paper it is unclear proportion of women who use different ARV regimens (sdNVP, monoAZT, monoAZT plus sdNVP) before and after the policy and guidelines change. What is the proportion of pregnant women who received ARV treatment for own health?

6) Very little proportion of HIV exposed children were tested for HIV and it is hard to make a conclusion about lower transmission rates in different periods of PMTCT program implementation.

7) “Of the 3 million inhabitants of the city, about 2.3% are pregnant women who are eligible for PMTCT services” – it would be more correct to present HIV prevalence among pregnant women, using as denominator total number of pregnant women rather all 3 millions of the city inhabitants.

8) There is no clear definition of the term "PMTCT site". Is it integrated with antenatal and delivery clinics or it is a referral HIV site, providing services for pregnant HIV positive women?

9) Infant feeding in the context of maternal HIV infection is an important route of postnatal HIV transmission. It feels that most infant in study population were breast fed, but there is no clear presentation of infant feeding patterns in this manuscript. Information about infant feeding is important to calculate PMTCT impact indicators.

10) “Direct HIV antigen testing of infants with polymerase chain reaction…” – PCR is not a method for direct HIV antigen testing, but technically it is used to detect proviral DNA or RNA of HIV. Direct HIV antigen testing is often referred to p-24 HIV antigen testing.

11) In 2007-08 a drop in ARV prophylaxis was observed. It would be interesting to know reasons for the drop of ARV prophylaxis: shortage of supply, decline, poor capacity of staff at the new PMTCT sites?

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests