Reviewers report

Title: Analysis of PMTCT service cascade in Ethiopia: 2006-2010

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Reviewer: Landry Tsague

Reviewers report:

A. Major Compulsory Revisions

Paper of interest in its field, and addresses an important priority for the children and HIV agenda. From the year 2000, many developing countries in sub-Saharan Africa have scaled-up PMTCT interventions with various levels of effectiveness, efficiency and impact. The paper provides an approach to analyze national PMTCT program in Ethiopia, assessing gap in achieving desired targets for key PMTCT indicators, predicting the attainment of UNGASS target by 2015, and formulating recommendations to accelerate its achievement. Some points on improvements are highlighted below:

A- Authors should set the context in the background for the reader to have a better understanding on the PMTCT program in Ethiopia...few questions to be addressed in the background: Total number of expected pregnancies each year, HIV+ mothers and children without PMTCT interventions? What is the National PMTCT ARV guideline and when was the more efficacious ARV regimens introduced in national PMTCT program? Is there a national PMTCT scale-up plan? If yes what are the key targets by end 2010? Do we have geographic and population based targets in the plan?

B- What is the definition of the cascade?

The authors should consider revisiting the definition of PMTCT cascade: This is critical as the UN defines 4 prongs for PMTCT (see page 6 in reference number 1 http://www.who.int/hiv/pub/mtct/strategic_vision.pdf ) and the PMTCT cascade has been traditionally limited to testing and ARV uptake for mother and babies. There is more emphasis for a paradigm shift in the definition of the PMTCT cascade, from a process-oriented to an outcome-oriented cascade, where maternal and child morbidity and mortality are the primary outcome (http://www.pepfar.gov/documents/organization/117840.pdf ). The 2010 PMTCT guidelines have stressed even more the need to improve children HIV free survival and maternal health (http://www.who.int/hiv/pub/mtct/antiretroviral2010/en/index.html ).

C-Trend Analysis

Authors should consider an analysis of the trend in the assessment of immunological status (CD4 count) of HIV+ pregnant women, initiation of HAART over time, and the overall transition to more efficacious ARV regimens (see paper by L Tsague et al (BMC Public Health. 2010 Dec 6;10:753) on Comparing
two service delivery models for the prevention of mother-to-child transmission (PMTCT) of HIV during transition from single-dose nevirapine to multi-drug antiretroviral regimens)

Authors should reconsider how results are presented throughout the cascade…it looks like more emphasis is put on the HIV counseling and testing and on ARV coverage….If this is right, then author should revise the title of their paper accordingly. Fig 4 indicates clearly that authors are not using population based estimate of the PMTCT needs, but are just limited to uptake among women attending ANC in PMTCT sites. Therefore, this should be clearly described in the methods section.

D- Triangulation of data and policy context

Finally, in the discussion, authors are encouraged to analyze bottlenecks at policy and financing level that needs to be addressed to reduce gaps in the cascade.

Methods:
• First sentence not indicated…should move to discussion.
• The predictive model as used in this analysis is questionable. It is not clear what is being predicted and at what timeline? Without a description of the
• Are data from the proportion of HIV+ mothers who received ARV (SDNVP, Combined ARV) from PMTCT sites be disaggregated by type of regimen?
• Data analysis: “…..Reported values of PMTCT indicators were used directly at this stage of analysis…” . There are major issues with this approach. The population coverage of PMTCT services is not determined because denominator is limited to women attending only PMTCT facilities; Authors is encouraged to show trend in absolute number if population level denominators not easy to estimate.
• Table 1: Authors should also focus on key internationally agree PMTCT indicators to monitor progress towards 2015 targets. Authors are encouraged to look for the definition of the WHO Universal Access indicators for PMTCT..(for example, percentage of health facilities providing ANC that offer both HIV testing and ARVs for PMTCT…is one them and looks at the geographic coverage of PMTCT services)

Results;

Fig 8-10: Authors are encouraged to use a consistent format for graphs, with bars (not tube) and showing a descending cascade (not an ascending one)….Fig 11 has a better cascade but tube should be replaced by bars.

For all figures: Authors should be consistent in the formulation of indicators in figure and their definition in table 1

Fig 2 should be improved by adding coverage (geographic coverage: number of PMTCT sites/existing ANC facilities)

Fig 3 unclear…what does “% ANC at PMTCT sites” stand for? How is this title
differ from Fig 1 title.

Fig 4 indicates clearly that authors are not using population based estimate of the need, but are just limited to uptake among women attending ANC in PMTCT sites

Fig 8. This is very good attempt to answering to some of the concern regarding population level coverage…. Authors should be consistent in the formulation of indicators in figure and their definition in table 1. Not clear what the following mean: “Attended ANC?” “ANC at PMTCT site”?

According to this graph, the population coverage of HIV testing in ANC increased from 2-22% between 2006-2010, and proportion of women accessing PMTCT services increased from 12-27% during the same period.

Fig 11 is good, but the formulation of indicators is not consistent with agreed standard in the UN Universal Access Report.

Antenatal coverage: …universal coverage (100% coverage)….Authors should indicate the reference of this target, as this should be reported in national strategic document. Historical trend of public health interventions (Immunization, malaria) has shown that coverage does not usually follow a linear trend, rather it become more and more challenging to increase coverage when the programme has completed 80-85% coverage (easily accessible population based on geographic location, socio-economic status and health seeking behaviors)

Potential PMTCT coverage: “… 2,657 PMTCT sites by 2015….” What % of the total ANC facilities?

B. 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.

Abstract:

a. Introduction: “national coverage remained persistently low” this statement should be more specific. Is this limited to Ethiopia or is a general statement for countries in sub-Sahara Africa. Authours should indicate country under study.

b. Methods:

i. It should include a brief description of the PMTCT cascade definition as used in this paper. The used of term “cascaded” to qualify the type of analysis does not add much, and is even confusing. Suggest deletion.

ii. “…..description of progresses made” this should be assessed planned national targets. If this was the case, it should be highlighted here.

iii. What is the threshold for universal coverage in Ethiopia? Is the 80% coverage as defined in Universal access target the one used?

c. Results:

i. What is the increase in number of sites providing PMTCT package of services from 2006-2010?

ii. “…achieve universal ANC coverage” this sentence is misleading or incomplete.
Are we referring to universal ANC coverage for the HIV counseling and testing component only? This concern highlights the need to define the standard PMTCT package in Ethiopia and how this package is delivered according to the health system architecture. Another concern is whether population or geographic reference point was used to assess coverage (expected pregnant women vs. number of ANC sites).

iii. “Prevalence….four-fold decrement…” This is important to highlight, but is not surprising when accounting for the increasing number of sites over time (with more decentralization in rural area), and the low background prevalence in rural vs. urban area. A stratified analysis by geographic setting (rural vs. urban) or temporal analysis of the prevalence in old site (2006-2007) vs. new sites (2008-2009) would help rule out this hypothesis.

iv. Authors should reconsider how results are presented throughout the cascade…it looks like more emphasis is put on the HIV counseling and testing and on ARV coverage….If this is right, then author should revise the title of their paper accordingly.

v. “..Based …estimated ARV coverage was found to be ….” This sentence is unclear. Authors should indicate date and if this is population based coverage (among all the expected HIV+ pregnant women in Ethiopia).

Conclusion: Should be revisited, not addressing the cascade issues in its recommendation. First sentence of conclusion is unclear…what do authors mean by “potential coverage”..”actual coverage”? Last sentence not based on data from the current work.

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:

NONE