Author's response to reviews

Title: Cost Analysis and Exploratory Cost-effectiveness of Youth-Friendly Sexual and Reproductive Health Services in the Republic of Moldova

Authors:

Jari Kivela (jari.kivela@Qalys.eu)
Evert Ketting (e.ketting@tip.nl)
Galina Lesco (glnles@yahoo.com)

Version: 2 Date: 27 May 2014

Author's response to reviews: see over
Dear editors,

We would like to thank the reviewers for their comments and time. We went the feedback through carefully and did many of the suggested improvements. Below are our responses to the points.

Please note that my last name changed to (Jari) Kempers. I don’t use Kivela anymore. Please change this in the article.

Best regards,
Jari Kempers on behalf of the authors.
Health Economist, MSc
+31 6 28440634
jari.kempers@Qalys.eu

Reviewer's report 1

Minor essential revisions

1. You make a series of assumptions about rates of disease, unwanted pregnancies etc. and although you acknowledge this as a weakness it would be helpful to describe where these assumptions come from and vary them in sensitivity analysis to explore their impact on the results.

   There is only limited adolescent SRH data in Moldova. Therefore we needed to rely on expert opinions of medical doctors of the youth centers. We added clarifications to the text, when expert opinions of medical personnel was used.

   We investigated further about the portion of unwanted teenage pregnancies in Moldova. We discovered a new source: Moldova Demographic and Health Survey 2005. This survey reported lower portion of unwanted pregnancies than we used. We adjusted the portion of unwanted pregnancies from 50% to 19.2% and redid the related calculations.

   The point related to sensitivity analyses will be responded under the first comment of the second reviewer (below).

2. At the end of the results you estimate the cost of running good quality YFHS services at the national level. You just multiply the number of centers by the total cost but previously have acknowledged that rural centers cost less than urban ones. I was wondering if there might be a more accurate way of estimating this.

   Given these centres are being run anyway you should also mention in the discussion that although this is the cost of running a good quality programme, the programme is already running, though not to the same standards throughout the country so a sponsor would have to provide an additional amount X to bring the programme nationally up to a high standard.
Purpose of the budget forecast
The purpose of this extrapolation was to provide MoH with an estimation for national level (high level budget estimation) decision making on funds needed on scale-up of good quality YFHSs. At the time of conducting this study, there was no detailed plan on how, when or in which order the YFHS would be scaled up. In the absence of a scale-up plan, more detailed country level costing was not feasible.

Extrapolation
In Moldova there is only one large center, Neovita YFHC. Other 37 centers are small. In this context and in the absence of a scale-up plan, using the average annual budgets of the three smaller well performing centers to estimate the national level costs was the most feasible approach.

Cost of current services in other centers
Current cost of other 34 centers are not known. This is because fragmented financing mechanisms and funding sources of the centers. Hence, we cannot quantify how much additional funds would be required for a national good quality YFHSs.

3. You should report the uncertainty (confidence intervals) around your estimates. You also need to present sources of main unit costs. Check the CHEERS statement for economic evaluation reporting.

The point related to uncertainty (sensitivity analysis) will be responded under the first comment of the second reviewer (below).

Costing part
The costs in the four centers were calculated and analyzed “top-down” from budgets of financiers of the centers. “Bottom-up” costing by using unit costs was not used.

The cost analyses were based on financial records of: i) Finance Services of Public Medical Health Institutions for YFHCs (FSPMHI), ii) NHIC, iii) National Centre of Reproductive Health and Medical Genetics (NCRHMG), iv) Health for Youth Association, v) FDCs and local authorities, and vi) information received from UNICEF, SDC and other donors.

Threshold analysis
Sources of unit costs (e.g. STI treatment, pregnancy tests, deliveries, HIV treatment) used in the threshold analysis are referenced in the paper. Additional clarifications were added to support assumptions (point 1 above).

4. The introduction could be argued more clearly, by the end of it I understand what you are going to do in the paper but not why this work is needed.

We addressed this point in the background section.

Discretionary Revisions
5. The four centers selected, were they the top 4 or were some others of similar quality and these were selected randomly?

The centers were first filtered by criteria 1, 2 and 3. The selected four centers obtained the highest score (criteria 4) among the remaining centers. Hence, the centers are the top 4, based on these criteria – no random selection was done.

The selection was based on the following criteria; 1) the centre has been operational for more than 3 years, 2) it provides an extended YFHS package [6], 3) it meets the quality standards of YFHS [6], and 4) it obtained a high score in a baseline evaluation of YFHS Quality Standards in 2009 [7].

Quality of written English: Needs some language corrections before being published

We edited and improved language of the paper. The edits did not change content the paper.

**Reviewer's report 2**

Reviewer's report:

This is a very interesting and important piece of research and should be published. I have made some comments below to help improve the paper.

**Minor essential revisions**

1) Analysis would be more meaningful if error estimates were reported. For example it would be interesting to see confidence intervals, standard errors, standard deviations and P values appropriately reported.

1. **Costing part**
   Costing part of the paper is based on *actual* costs and coverage of the four centers. Moreover, the four selected centers are not a random sample, but a standard for good quality (see criteria point 5 of the first review). Hence, sensitivity analysis are not relevant here.

2. **Budget forecast**
   For the budget forecast the underlining issue is the absence of a scale plan. In this context adding sensitivities is not very meaningful.

3. **Threshold analysis**
   In our view, sensitivity analyses would not add value to the exploratory threshold analysis.

   In the exploratory threshold analysis are the SRH (STI, unwanted pregnancies and HIV) outcomes are handled as *individual* services. This quite artificial, because in practice the SRH services are often provided together, e.g. a female comes for a pregnancy test and is also tested for STIs or a male who comes for STI treatment may also be tested for HIV.
Therefore the results of the threshold analysis should be interpreted as a whole. In the Moldovan context whether or not a center would break-even, depends almost solely on averted HIV infections which cause the by far the highest cost savings. Moreover, the break-even points for STIs and unwanted pregnancies are likely not achievable, when taking into account the size of target population. Adding sensitivities and confidence intervals for individual services would create a false sense of accuracy and miss the context of the program.

This is an exploratory analysis and we would prefer to keep it simple. The target audience of this article (and the journal of BMC Health Services Research, we assume) are policy makers and program managers – not health economists. A simple presentation will be understood better. Adding sensitivities, CIs, STDs would dilute the message and confuse the target audience. Limitations paragraph covers the main short comings this approach.

2) Check the average costs of providing YFHS to one person; my calculation is \(\frac{124000}{10250} = 12.09\) (assuming 2 consultations per person) not 12.2

The difference was caused by reporting rounded input figures in the paper.

Changed the presentation in the paper to:

\(\frac{124,000}{20,490} = 12.10\)

3) Check calculation of IEC activity; my calculation is \(\frac{51000}{20000} = 2.55\) not 2.59

The same issue as in the point 2.

Corrected.

4) check total cost of rolling out to all 38 centres: my calculation is \((37 \times 26000) + 89000\) is USD 1,051,000 not USD 1,033,000.

The same issue as in the point 2.

Corrected.

5) rethink the cost of an unwanted pregnancy by considering the cost implications of an unwanted child being born and brought up - suggest searching the literature for this. This is important as the costs of an unwanted child goes far beyond the costs of the birth and therefore it is likely to be the case that the cost-effectiveness of this element of the service is vastly under estimated.

This study is conducted from a healthcare providers’ perspective. Therefore, we limited the costs to direct and measurable consequences of unwanted pregnancies for the MoH of Moldova. These are: abortions, deliveries (normal and with complications) and ANC. Costs related to e.g. upbringing are outside of the perspective of this study.

6) The authors estimate the cost of rolling out the service to all 38 centres as USD 1,000,000. I would suggest reconsidering this as costs are likely to be different in the short, medium and long term - costs will be higher in the short term with set up costs, recruitment and training costs, but are likely to tail off over the medium and longer term.
As for the first reviewer’s point 2.

**Purpose of the budget forecast**
The purpose of this extrapolation was to provide MoH with an estimation for national level (high level budget estimation) decision making on funds needed on scale-up of good quality YFHSs. *(this was added to the methods).* At the time of conducting this study, there was no detailed plan on how, when or in which order the YFHS would be scaled up. In the absence of a scale-up plan, more detailed country level costing was not feasible.