Reviewer’s report

Title: Basing Care Reforms in Kenya on Evidence: The Kenya Costing Model

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Reviewer: Konrad Obermann

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General comments

A well-written, highly relevant and important study that addresses an often under-researched area in health economic and policy, i.e. cost. The sheer amount of data provided by the authors make it difficult to assess the soundness of the data, but selected calculations and cross-referencing indicate that the authors managed this formidable job very well. The “state-of-the-art” part is exceedingly thorough and clear. The “costing” is well described, the methods appropriate and very detailed. The “discussion” section is most valuable and highly relevant for health policy

I have three major comments / suggestions:

(i) A key aspect that is missing is the cost of this endeavour. To wit, the cost for setting up this costing model (and that should be full cost at the prices for necessary external consultants and travel, meetings etc.) and equally important, the estimated cost for regularly updating the model. The last paragraph of the paper points out to the challenging aspect that so many projects in development cooperation have be left as a one-off initiative which after some time then will become irrelevant.

(ii) Are there any sensitivity analyses done and / or estimations about the probably range of costing errors in the different cost parts?

(iii) Finally, in order to provide hands-on advice for others, I would like to see a text-box with the key “do’s and don’t’s” and possible a graphical presentation of the costing model.

Some additional comments and suggestions:

In the Summary:

Results: The total costs of essential health care services in Kenya were calculated as 690 million Euro or 18.65 Euro per capita. – could this be put in perspective to other cost data available?

54% were incurred by public sector facilities, 17% by Faith Based and other Nongovernmental facilities and 23% in the private sector. How about the remaining 6%?
Around 37% of this cost is absorbed by salaries and 22% by drugs and medical supplies. Meaning that 41% are fixed cost?

„Conclusions: Health care reforms must be based on economic facts instead of irrational assumptions about the costs of services.“ I would leave out this first sentence of the conclusions, it does not add to the content of the article.

p. 4: During the last few years the knowledge of demographic and disease-related statistics has improved due to strong investments into the Health Management Information System of Kenya. – Is there a source to back this up?

p. 7 selection of institutions: what is a level 1 institution and why wasn’t it included in the selection?

p. 7 To our knowledge this is one of the highest sample sizes of any costing study conducted in developing countries (this is somewhat vague, could you be more precise?), and this coupled with the depth of data collection, renders the Kenyan costing study the most comprehensive of its kind.

At the targeted facilities, a total of 1369 patients were randomly selected and asked about their demand-sided costs. Why this rather high number of patients? How were they selected?

p. 8: standard rate of inflation (5%) – were does the 5% come from? Kenyan nationa data? Should there not be any reference to medical inflation?

p. 11 and p.19: GtZ should be changed to GIZ

p. 12: The percentage of staffing costs as a percentage of total facility cost varies across sectors and levels with more than 70% of cost in public outpatient facilities and less than 20% in some private facilities. Whereas the 70% sounds very plausible, the 20% seems very low, a short comment on this finding would be helpful

p. 13: In the case of private facilities the costs per admission can be halved if productivity is increased. I cannot follow this line of reasoning, please explain.

p. 14: the issue of low occupancy rates is rightly addressed. It might be helpful, if some data could be inserted how cost would change if only some modest improvements could be achieved, the case for “economies of scale” is apparently a strong one and this could be an important argument in health policy discussions, some aspects are already covered on p.15 and figure 4
p. 15: the comparison between actual demand and “theoretical need” should be done rather carefully, the authors only cite the data from the DHS, and some theoretical reflection might be in order here.

p. 16: However, investments in health care are proven to be highly effective in a macro-economic perspective [64-65]. Maybe proven could be substituted by a less decisive word, after all, we do not have data from a RCT on this.

Please provide the exchange rate KSh – EUR – USD at the beginning, not just in a footnote.

I would change the title to “Basing health care reforms on evidence: …”

**Level of interest:** An article of outstanding merit and interest 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.