Reviewer's report

Title: Estimating age-based antiretroviral therapy costs for HIV-infected children in resource-limited settings based on World Health Organization weight-based dosing recommendations

Version: 2 Date: 27 December 2013

Reviewer: Nicolas Menzies

Reviewer's report:

Item 3/4 on initial review: It is great to see the sensitivity analyses about the analysis assumptions. The authors still need to provide a justification for their assumption that the coefficient of variation should be half the population value. In the Excel tool it is stated that this assumption is required so that the weight distribution for HIV-infected children will be narrower than for the general population, but this will be the case anyway if one assumes the coefficient of variation is fixed but the average is reduced. The authors must have had some motivation for this decision. If this decision was based on published research, please provide the citation. If the decision was based on unpublished information (e.g. programmatic experience of the authors, personal communications, etc), this can be fine, but just needs to be explained.

On the sensitivity analyses themselves, it is unconventional that both values used in the sensitivity analysis for $S_{hiv}$ ($S_{hiv} = S$ and $S_{hiv} = S/\sqrt{2}$) are larger than the value used in the main analysis ($S_{hiv} = S/2$).

I also note that $S$ is used to describe the variance in some locations and the coefficient of variation in others, including in the edits made in response to the initial review. The variance and the coefficient of variation are different quantities, with the coefficient of variation equal to the square root of the variance divided by the mean. I am not sure if this is the source of the issues discussed above, but is makes it unclear how these quantities are being used in the analysis. Please review to make sure the correct term is being used in the text (and correct value in calculations).

All other changes: look great. In particular, the Excel tool now looks very clear.

Level of interest: An article whose findings are important to those with closely related research interests

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.