Reviewer’s report

**Title:** Cost-effectiveness of Rotavirus Vaccination in Vietnam

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**Reviewer:** Cecile Viboud

**Reviewer’s report:**

This is a very nice paper exploring the cost-effectiveness of a rotavirus vaccination program in Vietnam. The analysis is solidly rooted in epidemiological and clinical effectiveness data from Vietnam and other settings, and is more detailed than previous cost-effectiveness analyses for developing countries (ref 13-15).

I only have a few comments to improve the manuscript:

Discretionary Revisions:

1) The authors focus their analysis on Rotarix, a monovalent 2-dose vaccine, and do not consider Rotateq, a tetravalent 3-dose vaccine. Would the results change substantially if the authors had considered Rotateq, which requires 3 doses but covers more serotypes circulating in Vietnam, including G1-G4?

2) The authors used an estimate of 5$ for the cost of a single rotavirus vaccine dose in their base case scenario, but the current price agreed for developing countries (Brazil) is 7$. Using a base scenario of 5$, the rotavirus program appears to be “very” cost effective (ie, very close to the per capita GDP), but there is no guarantee that the cost of Rotarix will actually go down at this point. Besides, setting the cost at 5$ seems arbitrary, and it would be more fair to use 7$ as a base case scenario. Further, in addition to the sensitivity analyses, the authors could estimate a threshold for the cost of vaccine, below which the program does become “very” cost-effective (which should be around 5$).

3) The model used in this analysis does not include the effects of herd immunity. Indeed, if vaccine coverage is expected to be as high as 90-98% in Vietnam, transmission of rotavirus is expected to decline in the community, thus indirectly protecting unvaccinated individuals (including older kids and adults) as well as vaccinated children who did not respond well to vaccination. This effect could be extremely important, as suggested from preliminary data from the US, where 30-60% vaccine coverage in kids under 13 months of age produced a dramatic decrease in rotavirus transmission (MMWR June 27, 2008). I wonder if the authors could take this herd effect into account in their model, as this would work in favor of the vaccination program. If this effect cannot be taken into account, this has to be at least stated as a major limitation of the model.

4) Why isn’t there a range of estimates considered for age-specific rotavirus mortality rates (table 1)?
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