Reviewer's report

Title: Economic burden of cholera in the WHO African Region

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Reviewer: Eric D Mintz

Reviewer's report:

Major Compulsory Revisions:
None.

Minor Essential Revisions:
I am not an economist, but from my read of this manuscript, approximately 90% of the total estimated costs of cholera in Africa were attributable to the less than 1.78% of patients who died of the disease. Clearly, the estimate is very much dependent on the monetary value assigned to a human life, and it would be nice if the authors presented (in Key Findings, Page 13) the cost of cholera per surviving patient, and the cost per cholera death. One could argue that an investment in better medical care (access to rehydration therapy) would be much more cost-effective, particularly in the short-term, than an investment in the infrastructure needed to assure cholera prevention (water and sanitation coverage). Of course, taking into account the other diseases mentioned below, that might not be the case.

Related to the comment above, by the measures used, it is quite likely that many of the more common diarrheal diseases, such as shigellosis, salmonellosis, and infection with diarrheagenic Escherichia coli are far more costly than cholera. These diseases are not reported to WHO, but in hospital or population-based studies of diarrhea, they are almost always more common than cholera, and sadly, they can be just as deadly. The authors should mention that the main driver of the costs of cholera in their study is the premature death of young children, and that many other diarrheal, respiratory, and vectorborne diseases exact a toll of childhood mortality that surpasses that of cholera.

Finally, although I may be wrong, I believe that Table 1 should cite reference 10, not reference 4.

Discretionary Revisions:

1) The authors base their report on the Annual Cholera Summary figures for 2005, published by WHO in the Weekly Epidemiologic Record in August 2006. Since then, WHO has published (in August 2007) figures for the following year, and next month, they will publish figures for 2007. The authors may wish to consider redoing the calculations using the most up to date figures. In 2006, the number of cholera fatalities reported from Africa increased three-fold, and the number of cases nearly doubled. I do not know what the numbers from 2007 will
be, but one could certainly argue that a 3-year average from 2005 through 2007, or three separate annual calculations, would provide a much more representative portrayal of the true magnitude of the economic costs of cholera on the continent. Given the importance of premature mortality in their model, the costs of cholera could easily increase by 300% from 2005 to 2006.

2) The authors may wish to refer to a report by L. Haller, G. Hutton, and J. Bartram published in the Journal of Water and Health 2007 which includes a cost analysis of various scenarios to improve household drinking water quality. While increasing population coverage with piped treated water and sanitation remain the ultimate goals, for the purpose of preventing cholera epidemics from spreading, much less costly options are available and well-documented to be effective. Simply adding chlorine to drinking water at the household level is effective at preventing cholera and costs less than a penny a day. A great deal more information on household water treatment is available at the WHO website.

3) Page 14 (d). These figures on care-seeking behavior appear to be taken from an article by one of the authors about mental illness. It is not clear to me that they can be generalized to patients with the acute onset of profuse watery diarrhea, vomiting, leg cramps, and the other symptoms of cholera. Traditional medicine practitioners may be sought, but I think in the setting of an acute, severe, gastrointestinal illness, patients would tend to seek antibiotics and rehydration.

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

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

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

No competing interests.