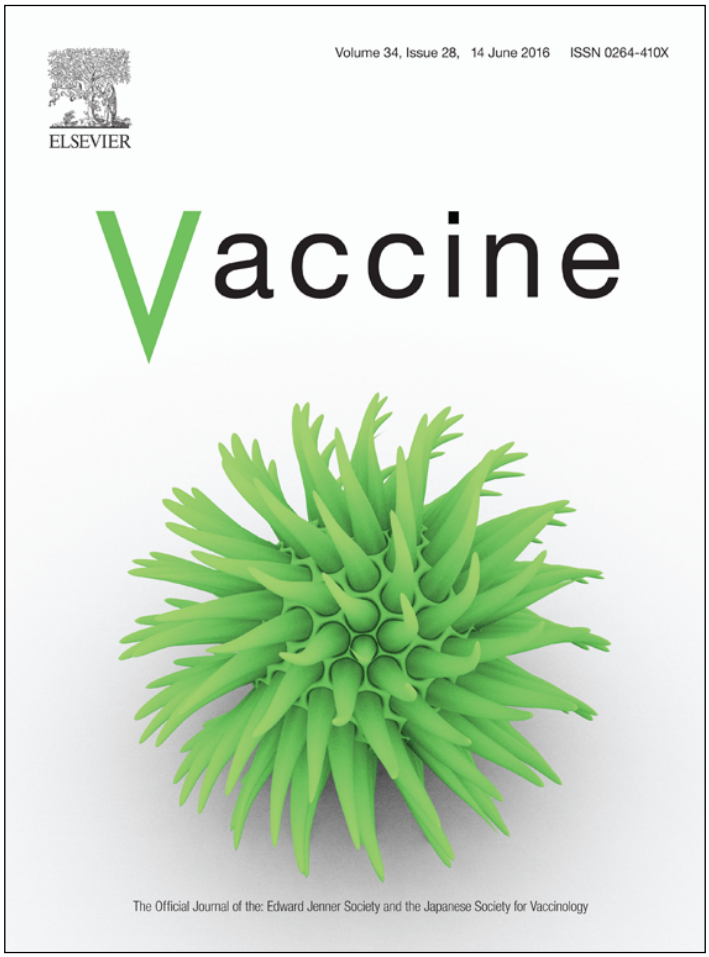

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Letter to the Editor

Will dengue vaccination be cost-effective for Argentina? Reply to letter by Urueña et al. regarding "Cost-utility analysis of dengue vaccination in a country with heterogeneous risk of dengue transmission"

Keywords:
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We appreciate the previous comments about our article and thank for an opportunity to further discuss the potential cost-effectiveness of dengue vaccination in Argentina. Below we address the points raised by Urueña and colleagues.

The objective of our article was to evaluate the cost-effectiveness of a dengue vaccination strategy in Argentina, not the assessment of a specific vaccine. For this purpose, we used the available evidence about two dengue vaccines, which were having the highest development at the time when the manuscript was being written. The CYD-TDV vaccine from Sanofi-Pasteur showed promising clinical efficacy in two large phase III trials [1], while the National Institute of Health (NIH) and the Butantan Institute of Brazil published detailed production costs data of their Butantan-DV [2]. Based on a model from Brazil, we assumed the optimum age of vaccination as children of two years [3], while concurrently the Butantan-DV vaccine is being tested in children over two years, adolescents, and adults [4].

It is true that the current evidence suggests that the efficacy of the CYD-TDV is higher in seropositive recipients [1] and that the majority of the Argentinean population would lack a priming response against dengue. However, several cities of Argentina show an almost yearly indigenous transmission, circulation of more than one serotype, and have suffered from several major outbreaks. These cities are bordering endemic regions of neighboring countries (Bolivia, Paraguay and Brazil) and share geographic, climatic and socio-cultural characteristics, besides intense local border traffic. In fact, our article has suggested a vaccination strategy specifically targeted to these areas as the most cost-effective option. An appropriate seroprevalence survey should be carried out before a conclusion about the serostatus of the population in these areas could be reached.

Our article adopted a societal perspective rather than a payer one. Accordingly, we used the marginal cost of producing the vaccine as a proxy to the opportunity cost, instead of the distorted market prices or the reduced prices paid by different countries. It should be noted that the societal perspective is framed in the normative economics, and by contrast, the payer perspective is framed in the positive economics. An explanation of this difference or about the interpretation of the societal perspective is beyond the scope of this article. We suggest consulting an excellent article by Garrison et al. [5]. However, in anticipation of these difficulties for interpreting our results, we have also performed an alternative threshold analysis in our paper, and concluded that if a vaccination strategy targeted to the areas that suffer with recurrent outbreaks is implemented, the vaccination program would be cost-effective with a price of US$28.72 per dose. This value is far away from the production costs, and with such price the targeted vaccination strategy could still be cost-effective.

Finally, we agree that in an outbreak situation, the efforts should be focused on previously validated measures of disease prevention and mitigation, and would like to make it clear that our paper does not deal with the evaluation of the control measures for the current outbreak.

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