Reviewer’s report

Title: Cost-effectiveness of human papillomavirus vaccine for prevention of cervical cancer in Taiwan

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Reviewer: Jaume Puig-Junoy

Reviewer’s report:

The purpose of this paper is to present the results of a cost-utility analysis of human papillomavirus (HPV) vaccine in Taiwan.

A vast array of cost-utility analysis on HPV vaccine in several countries have been published in the last 2/3 years. There is not any method contribution to the economic evaluation of HPV in this paper (i.e., herd immunity effects have not been estimated; a dynamic model is not employed). This paper uses a relatively simple Markov decision model to estimate the incremental cost per QALY of HPV vaccine in Taiwan.

MAJOR COMPULSORY REVISIONS

I find surprising that a recent and previous paper performing a cost-utility analysis of HPV vaccine in Taiwan is not referenced in this paper (Dasbach et al, “The cost-effectiveness of a quadrivalent human papillomavirus vaccine in Taiwan”, Asian Pacific Journal of Cancer Prevention 2008, 9: 459-66). Dasbach et al presents the results of an economics evaluation estimated using a transmission dynamic model which is more appropriate and complicated than that used in the paper submitted to this journal. In fact, Dasbach et al report that vaccination of 12-yearsold girls strategy is weakly dominated by no vaccination!. It is at least surprising that the results of this paper do not deserve any attention to the authors of the submitted paper. The authors should convince the editor and the referees about the contribution to the literature of the submitted paper taken into consideration similar published papers.

MINOR ESSENTIAL REVISIONS

In my opinion, independently of the previous main objection to the paper, the interest of the paper is moderate, and some other problems should by solved by the authors before publication:

1. The authors should provide a more comprehensive and appropriate list of references containing at least the various surveys on HPV vaccine cost-utility analysis that have been published in the past recent years. I recommend to carefully check references 7-12 because many of them, despite what the authors claim, do not correspond to economic evaluations of HPV.

2. The decision model used in the paper should be clearly compared with those other used in this literature for other countries in order to show similarities and differences, and their implications.
3. Results of the sensitivity analysis should be presented and described in a more detailed way. A table including maximum and minimum values under each of the scenarios considered in the sensitivity analysis should be included and discussed in the paper.

4. Using the results of a cost-utility analysis, a health intervention can only be considered cost-effective or cost-ineffective when an arbitrary exogeneous threshold is introduced. Then, it is not scientifically appropriate to state that HPV vaccine may be cost effective without clearly indicating the threshold (i.e., in the abstract and the conclusions of the paper).

5. Variation in ICERs reported in the results section should be explained. The main sources of ICER variation should be identified and their implications should be discussed. The authors should compare their ICER obtained in this paper with those reported in the recent literature (see for example, the Dutch study published by de Kok et al 2009), and justify results variation observed.

6. Sensitivity of conclusions to current screening compliance rate should be stressed given that screening and HPV vaccination are not substitutes, and that the authors recommend increasing compliance rates.

7. A sub-section on costs should also be included in the Methods section. Monetary units used in the paper, the year of reference, and used exchange rates should also be reported.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I declare that I have no competing interests' below.