Reviewer’s report

Title: A Cost-utility Analysis of Cervical Cancer Vaccination in Preadolescent Canadian Females

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Reviewer: Marco Zappa

Reviewer’s report:

The present paper provides a cost-utility analysis, via mathematical modelling, of the impact of HPV Vaccination on cervical cancer in Canada. As mentioned, several studies have just examined the cost-effectiveness of HPV vaccination in different Countries. What looks to be new and worth publishing in this study is the evaluation of the so called “herd immunity” using a simple mathematical parameterized model.

Anyway, some clarification and some extensions of the study would improve the interest of the paper

Background

Pag 1 row 4 “Annually approximately 5,5 million (40%). The number of women performing a pap test per year is not very informative. Can the authors provide an estimate of actual coverage at 3 or at 5 year ?

Model Structure

In the model the screening coverage was assumed to be 70% and the vaccine coverage 75%. It seems that, in the model, the probabilities of screening and vaccination were assumed as independent. Actually this is not probable (i.e. it will be more realistic that a not vaccinated woman will be also a not screened woman) and it would have an impact on cost-utility analysis. Could the authors include in the sensitivity analysis, a factor of correlation between probability of vaccination and probability of screening?

Calibration

a) the model tends to overestimate the mortality rates from cervical cancer. Although the difference is reported not to be statistically significant it is worthwhile that in each age class the modelled rates overestimate the observed rates with the consequence of overestimating the effect of vaccination. This issue should be highlighted in the discussion

b) no calibration has been made with the prevalence of HPV onc in the general population. Is this information not available for Canada? Anyway would be of interest to give a description of this parameter.
Cost

“..Data on costs were taken from literature..”. Could the authors specify if the information derives from local cost analysis or was obtained from other Countries?

Result

It would be of great interest to add a section in the Result indicating in what range of values (for discount rates, cost per dose, costs per cured cancer and so on), if any, we could obtain a cost saving situation (see Vaccine vol 26 Supplement 11 2008. Goldie SJ et al

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

No competing interest