Reviewer’s report

Title: Impact of HPV vaccination: health gains in the Italian female population

Version: 1 Date: 05 May 2017

Reviewer: Angelo Lorenti

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The study aims to evaluate the effects of HPV-vaccination in Italy, investigating the impact of HPV on both mortality and morbidity on a synthetic cohort of Italian women. The author uses a multistate life table based on a discrete time Markov chain to estimate life expectancy, Qalys and Dalys to evaluate the effectiveness of the HPV vaccination in the Italian population. The transition probabilities used in the model are obtained from the literature.

The author has introduced many changes to the original manuscript but still many others are needed to make the paper publishable.

- The manuscript should be better re-organized. The sensitivity analysis must be better explained as well as the implications of that exercise. The section describing the sensitivity analysis can be included directly in the discussion of its results. Results and discussion are not easily readable and the message for the reader is confusing.

- The author states that the values of the parameters included in table 1 are now provided in the appendix. However I did not find any table in the appendix reporting transition probabilities.

There are several secondary points that the author needs to address. Specifically:

Page 3 - line 20: The author mentions that there are 23 transition probabilities for each age group. Which are the considered age groups?

Page 3 - line 18: According to table 1 there are 26 probabilities, but the author reports in the text that there are 23 tr. probs (pg3, line 18).

Page 5 - line 13: It is not opportune to write that "there are no reliable data referred to HPV-related disease considered in this study". If there are no reliable data for this study, why the research should be considered for a scientific publication? If the point was that there is no "official" data suitable to this study then I recommend to rephrase!

Page 7 - Table 1: The table is not easily readable and there are some parameters with no reference. For instance, I cannot find any reference for subscripts 9 of the lambdas, I guess they should be 8. If this is the case the table should be corrected. If it is not, the author should provide further explanations.
Page 11 - line 31: There is a typo in the formula: the age subscript of pi is missing.

Page 11 - line 47: Is this assumption that "vaccination effectiveness for Anal Cancer is the same as for the Cervical cancer" tenable? In that case should be motivated and referenced.

Page 13 - line 18: "over 0.85 years are lived in a pathological condition". Is that the correct number?

Page 15 - table 3: The table is not readable - columns 4 and 5 should have the same number of decimal places.

Page 17 - line 1 to 5 - Please rephrase and clarify.

Page 17 - lines 42 - 44 (82.75 Qalys) (83.1 years). The author should report the same number of decimal places.

Page 18 - line 52 - "mobility mortality life table" ? Is that supposed to be morbidity...?

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Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited

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