

The Reply to the Letter on the Cost-Effectiveness of Human Papillomavirus in Punjab Further Distorts the Scientific Record

Articles in peer-reviewed scientific journals become part of the scientific record. For this reason, the correspondence column opens up the science to wider peer review as part of the effort to uphold the scientific validity of published science. We are concerned that the reply about the cost-effectiveness of human papillomavirus vaccination in Punjab¹ is not entirely factual, and it also misrepresents the science published by others.

Prinja et al¹ quote Goldie et al² as reporting the following: “Only if the price of vaccine is considered as high as US \$100 per dose, the cost per DALY [disability-adjusted life-year] averted generally exceeds the cost-effectiveness threshold of the respective countries.”

This is not true. Goldie et al² evaluated health and economic outcomes of human papillomavirus vaccination in Global Alliance for Vaccines and Immunization–eligible countries, and they found that at a cost per dose of approximately US \$2, the cost per DALY averted was less than I \$100 for 49 of 72 countries and less than I \$200 for 80% of the countries. They wrote that “at higher costs, including the current price in the US (more than US \$100 per dose) the cost per DALY averted generally exceeds cost-effectiveness thresholds that would be considered favorable, implying the resources would save more lives if allocated elsewhere.”

By the deletion of the phrase “at higher costs” (in comparison with US \$2 as suggested by the previous sentence) and the incorrect insertion of the word “only” (“only if the price of vaccine is considered as high as US \$100 per dose”), the inference has been changed substantially.

In our letter,³ we point out that the cost-effectiveness calculation of Prinja et al⁴ assumes 99.1% mortality for cervical cancer (733 deaths among 740 cases of cervical cancer). The authors in their reply suggest that this is because 51.6% of the cases in India are detected

only at stage 3 or 4 when the prognosis is not good. If we assume 100% mortality in this group with a “poor prognosis” and that all 7 survivors were among the 48.4% (358 patients) detected at stage 1 or 2, the mortality in the group with a “good prognosis” (stage 1 or 2 cervical cancer) works out to be 98%. This mortality rate is unprecedented in the literature for this cancer. Obviously, either the input data or the model itself is defective if the results thrown up are so obviously erroneous.

We are, therefore, concerned that the authors reiterate that their “findings of cost-effectiveness are valid and should be used for policy in India.” The evidence-based deliberations of the National Technical Advisory Group on Immunization in India sets great store by published literature, and it is crucial that distortions in cost-effectiveness analyses from India be corrected.

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CONFLICT OF INTEREST DISCLOSURES

Jacob M. Puliyeel is a member of the National Technical Advisory Group on Immunization of the Government of India. The opinions expressed are personal.

REFERENCES

1. Prinja S, Bahuguna P, Faujdar DS, et al. Reply to cost-effectiveness calculations of human papillomavirus vaccination in Punjab may be flawed. *Cancer*. doi:10.1002/cncr.31075 [epub ahead of print].
2. Goldie SJ, O’Shea M, Campos NG, Diaz M, Sweet S, Kim SY. Health and economic outcomes of HPV 16,18 vaccination in 72 GAVI-eligible countries. *Vaccine*. 2008;26:4080-4093.
3. Suman V, Puliyeel JM. Cost-effectiveness calculations of human papillomavirus vaccination in Punjab may be flawed. *Cancer*. doi:10.1002/cncr.31074 [epub ahead of print].
4. Prinja S, Bahuguna P, Faujdar DS, et al. Cost-effectiveness of human papillomavirus vaccination for adolescent girls in Punjab state: implications for India’s universal immunization program. *Cancer*. 2017; 123:3253-3260.

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