

Domestic HPV vaccine price and economic returns for cervical cancer prevention in China: a cost-effectiveness analysis

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Background:

Coinciding with the recent release of the first Chinese domestic human papillomavirus (HPV) vaccine, Cecolin, and the substantial advancements in cervical cancer screening technology, we evaluated the cost-effectiveness of the combined strategies of cervical cancer screening programmes and universal schoolgirls vaccination with Cecolin in China.

Methods:

We developed a Markov model of cervical cancer to evaluate the incremental cost-effectiveness ratios (ICERs) of sixty-one intervention strategies, including a combination of various screening methods at different frequencies with and without vaccination, and also vaccination alone, from a healthcare system perspective. We conducted univariate and probabilistic sensitivity analyses to assess the robustness of the model findings.

Results:

Compared with 'no intervention', various combined screening and vaccination strategies would incur an additional cost of US\$6,157,000–22,146,000 and result in 691–970 quality-adjusted-life-years (QALYs) gained in a designated cohort of 100,000 schoolgirls over a lifetime. With a willingness-to-pay (WTP) threshold of 3-time Chinese per-capita gross domestic product (GDP), 5-yearly *careHPV* screening with vaccination would be the most cost-effective strategy with an ICER of US\$21,799/QALY compared with the lower-cost non-dominated strategy on the cost-effectiveness frontier, and the probability of it being cost-effective (44%) outperformed other strategies. Strategies that combined screening and vaccination would be more cost-effective than screening alone strategies when the vaccination cost was below US\$50/2 doses, even with a lower WTP of 1-time per-capita GDP.

Conclusions:

Five-yearly *care*HPV screening with vaccination is the most cost-effective strategy. Reduction in domestic HPV vaccine price is necessary to ascertain a good economic return for the future vaccination programme.

Disclosure of Interest Statement:

None declared.