

**ECONOMIC ANALYSIS OF STRATEGIES FOR CERVICAL  
CANCER PREVENTION AND CONTROL IN INDONESIA**



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**ABSTRACT**

Evidence-based decision-making of healthcare interventions emerges from economic analysis. This study aimed to determine the cost effectiveness of strategies for cervical cancer prevention and control in Indonesia.

An existing computer-based Markov model of the natural history of cervical cancer disease which was first developed for Thailand setting was adopted to simulate an age-stratified cohort of women in Indonesia. Seventeen strategies such as single or combination strategies of human papillomavirus (HPV) vaccination for adolescent girls at age 12 years old; screening with visual acetic acid (VIA) for women aged 30 – 45 years old; and screening with Pap smear for women aged 30 – 65 years old were analyzed and compared with existing strategy of treatment for cervical cancer or “do nothing” strategy. The strategies varied in combinations of intervention and interval for screenings. A base case of 20% screening coverage rate and 80% vaccination coverage rate was assumed. The scenarios of 50% and 80% screening coverage were also assigned. The study also analyzed the assumption of providing 2 and 3 vaccine doses.

All screening strategies had incremental cost effectiveness ratios (ICERs) less than per capita GDP of Indonesia in 2013 (IDR 35 million or USD 3,475). The most cost effective strategy with the lowest ICER was screening with VIA every 5 years, where the incremental cost effectiveness ratios (ICERs) were IDR -204,000 (USD -19.77) per quality adjusted life year (QALY), a cost saving strategy in a societal perspective; and IDR 634,000 (USD 61.45) per QALY, in a health system’s perspective. All strategies involving vaccination had ICERs between 1 – 3 times GDP. The ICER for providing HPV vaccination as single intervention revealed from this study were IDR 77.6 million (USD 7,522) per QALY and IDR 46.3 million (USD 4,490) per QALY for 3 and 2 doses assumptions, respectively, in a societal perspective. Meanwhile, in a health system’s perspective, ICER for vaccinations were IDR 77.8 million (USD 7,541) per QALY and IDR 48.4 million (USD 4,689) per QALY for 3 and 2 vaccine dose strategies, respectively.

Based on economic evidence, the results of the study support a continuation of the pilot program of VIA in Indonesia with economic evidence. Moreover, scaling up the screening program for the whole country, making the program equitable for every woman, is strongly recommended.

**KEY WORDS:** ECONOMIC ANALYSIS / MARKOV MODEL / CERVICAL CANCER / SCREENING / PAPILOMAVIRUS VACCINES / INDONESIA

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