INVESTMENT IN PREVENTION: AN ECONOMIC EVALUATION TO MAKE INFORMED POLICY DECISION ON THE INTRODUCTION OF HUMAN PAPILLOMAVIRUS (HPV) VACCINE TO THE NATIONAL IMMUNIZATION PROGRAM IN THAILAND

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Introduction:
This study estimated health impact and cost-effectiveness of adding a quadrivalent HPV vaccination program for fifth-grade girls to the existing cervical cancer screening program from the Thai payer perspective. This is the first study in Thailand that used a proposed tender price of vaccine shown on recent news in the analysis.

Methods:
A published transmission-dynamic model was adapted to Thailand setting. Model inputs were obtained from literature, unpublished data and expert opinion. Future costs and outcomes were discounted at 3%. Two vaccination strategies of combining cervical cancer screening with routine vaccination (11- to 12-year-old females) and with routine plus 5-year catch-up vaccination (13- to 24-year-old females) were compared to screening program alone. Analysis was performed for a 100-year time horizon.

Results:
Compared with current screening practice, routine vaccination reduced cumulative incidence of cervical cancer (-54%), CIN1 (-71%), CIN2/3 (-70%), genital warts among females (-75%) and males (-63%), and cervical cancer deaths (-52%). Routine vaccination also resulted in reduction of disease costs for cervical cancer (-24%) and genital warts in females (-52%) and males (42%). The reduction in HPV6/11-related disease incidence and costs avoided occurred relatively soon after vaccination. Considering the recommended threshold of 160,000 THB/QALY, both routine and routine plus catch-up programs are cost-effective with discounted incremental cost-effectiveness ratios (ICER) of 24,034 and 23,604 THB/QALY, respectively. The ICER increased by about 59% for both strategies where HPV6/11-related effects were excluded from quadrivalent HPV vaccine.

Conclusions:
Addition of quadrivalent HPV vaccination to current screening program is cost-effective, particularly when catch-up vaccination is incorporated. The results are imperative to assist policy decision-making to include HPV vaccination in Thailand NIP.