To study time horizon: Lifetime

Study population: Women in the U.S.

Decision tree (Figure 1) was used to estimate the costs (in 2004 US$) and outcomes for women receiving HPV vaccination or mandatory HPV vaccination combined with conventional cytology screening.

Input values (Table 1): Costs and epidemiological data derived from published literature and health institution websites.

Outcomes (Table 2): Life expectancy and quality-adjusted life years (QALYs) gained from published literatures.

The incremental cost-effectiveness ratio (ICER) for HPV vaccination combined with the triennial screening compared to vaccination alone was $251,812 per QALY gained (Table 3).

When increasing the frequency of screening to biennial and annual, the ICER of HPV vaccination combined with screening compared to vaccination alone changed to $385,505 and $593,195 per QALY gained respectively (Table 3).

The ICER increases with screening costs increase.

Vaccination + test increases with QALYs of having cancer increase.

The ICER decreases with lifetime cancer risk reduction by triennial tests increases.

Vaccination combined with conventional cytology screening is not cost effective compared to vaccination only.

Routine cytology screening should not be recommended for women who have been successfully vaccinated.

For more information, please contact Dr. Katia Noyes at katia_noyes@urmc.rochester.edu

References:

Results