

Routine vaccination of women with the 9-valent HPV vaccine in Japan is considered to be cost-effective.

Cost-effectiveness of introducing HPV 9-valent vaccine for women in Japan.

Background: In Japan, the HPV 9-valent vaccine was introduced as a routine vaccination for girls in April 2023. We were in charge of cost-effectiveness analysis (CEA) in the fact sheet that was used when discussing the introduction of routine vaccination at the Vaccine Council of the Ministry of Health, Labor and Welfare. In this presentation, we provide an overview of the analysis we conducted.

Methods

At the time of our analysis, only **three** doses of both the 4-valent vaccine and the 9-valent vaccine were approved for women. We constructed a Markov model based on the natural history model from HPV infection to cervical intraepithelial neoplasia, CIN1, CIN2, and CIN3, as well as to the development of cervical cancer (Fig.1). From the public healthcare payers' perspective, vaccination-related costs and healthcare costs related to HPV infection were included in the analysis. Japanese data were used for natural history and healthcare cost, while vaccine efficacy and quality of life data were obtained from overseas literature.

Results

In the base-analysis, the ICER for 9-valent HPV vaccination was 4.2 million yen/QALY when no vaccination was used as a comparison, and 2.28 million yen/QALY for 9-valent HPV vaccination with 4-valent HPV vaccine as a comparison, which is below the 5 million yen/QALY generally considered to be cost-effective in Japan. A probabilistic sensitivity analysis confirmed that the results were robust (Fig.2).

However, the cervical cancer screening uptake rate and the long-term efficacy of the vaccine had a significant impact on the results.

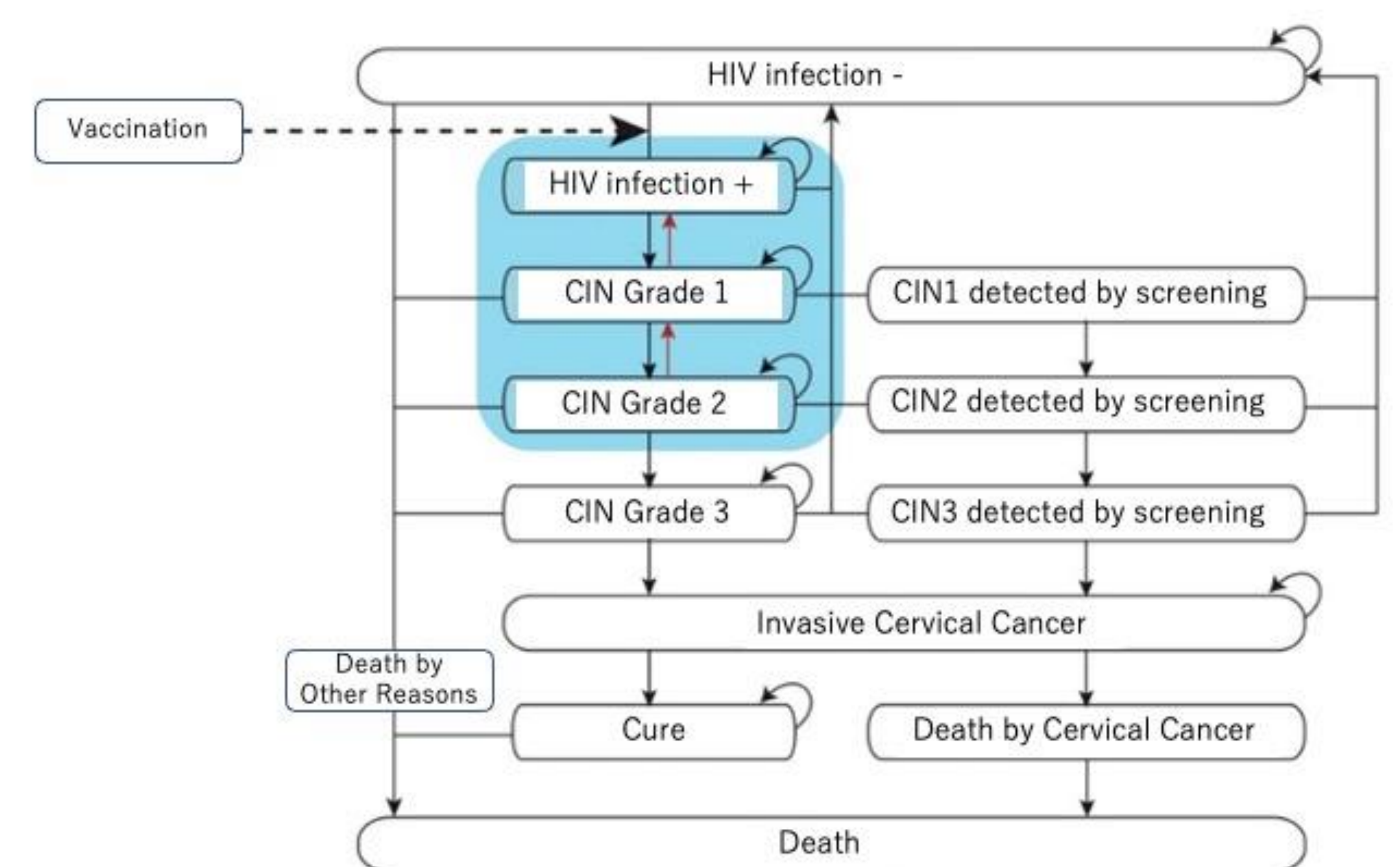


Fig.1 Markov Model

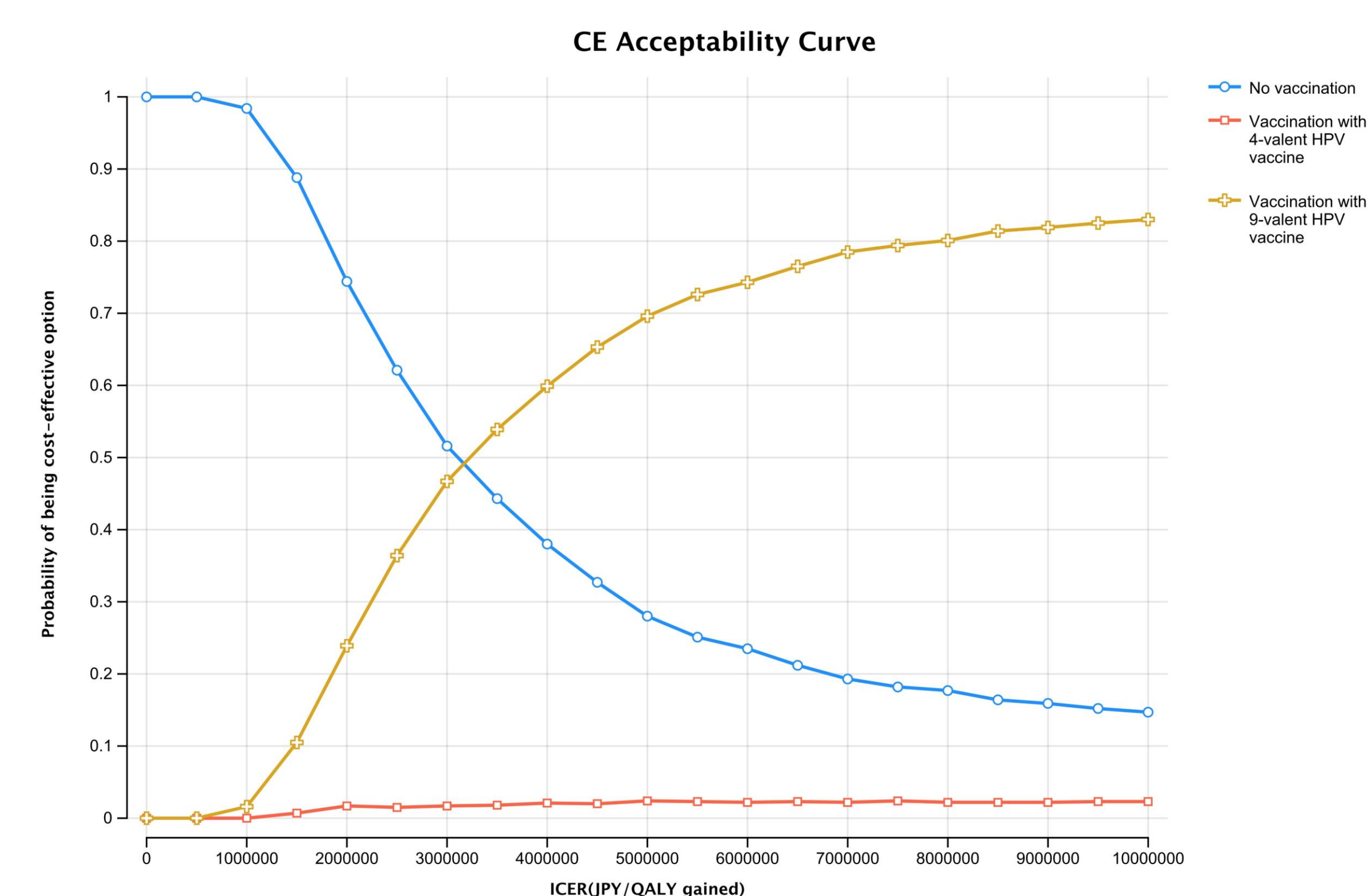


Fig.2 Cost-effectiveness acceptability curve

Future directions: The Vaccine Council of the Ministry of Health, Labor and Welfare was discussing the recommendation of routine vaccination with three doses of the 9-valent HPV vaccine based on our CEA results. However, at the same time as that discussion, **two** doses of the 9-valent vaccine were approved in Japan, and routine vaccination with two doses of the 9-valent vaccine was introduced in April 2023 without conducting new CEA since the same efficacy can be expected at a lower cost.

Now that the 4-valent vaccine is available for use in men in Japan, the Vaccine Council will begin discussions on the revision of the routine HPV vaccination policy in the near future. It is necessary to update the CEA of the HPV vaccine to contribute to the discussion at the Vaccine Council.

