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Letter to the Editor

Response to Curran and Mrkvan, Letter to the Editor: Response to publication by Hoshi SL et al.: Cost-effectiveness of varicella vaccine against herpes zoster and post-herpetic neuralgia for elderly in Japan



We thank Curran and Mrkvan for their interest in and comments to our paper “Cost-effectiveness of varicella vaccine against herpes zoster and post-herpetic neuralgia for elderly in Japan” in Vaccine [1].

We would like to respond to their insightful comments. Firstly, vaccine efficacy (VE) reported by Long term Persistence Sub-study (LTPS) [2] was our first choice, due to its feasibility in application with our model. However, we found that LTPS was not able to demonstrate how VE changed with chronological age, thus we adopted VE estimates from Li et al. [3], and conducted sensitivity analyses on these data to understand how it impacted the results. Our sensitivity analysis showed that the uncertainty of VE didn't change the ICER largely as expected.

Secondly, in order to consider the alternative VE and waning scenario, we conducted additional threshold analyses to find out the VE duration, which could lead the ICERs of the four strategies beyond the cost-effective criteria, which is ¥5,000,000/QALY in our study. Results showed that ICERs would be beyond 5,000,000/QALY for each strategy when the duration is <6 years.

Lastly, we also conducted an additional scenario analysis, which adopted the VE reported in LTPS [2]. We assumed VE estimates from 1st to 8th year: 0.620, 0.489, 0.468, 0.446, 0.431, 0.306,

0.460, and 0.311 over every age stratum, respectively, with no VE set from 9th year and onwards. Results showed that ICERs for all four strategies were less than ¥5,000,000/QALY (Table 1).

We think that the results of the additional threshold analyses, of 6 years, suggest the stability of the conclusion of our paper. Results of this additional scenario analysis using VE estimates based on LTPS though produced less favourable ICERs, can still be judged as cost-effective. Although the VE and waning scenario adopted in our paper might be opportunistic, the vaccination programmes could still be concluded as cost-effective.

References

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- [2] Morrison VA, Johnson GR, Schmader KE, Levin MJ, Zhang JH, Looney DJ, et al. Shingles Prevention Study Group. Long-term persistence of zoster vaccine efficacy. *Clin Infect Dis* 2015;60(6):900–9.
- [3] Li X, Zhang JH, Betts RF, Morrison VA, Xu R, Itzler RF, et al. Modeling the durability of ZOSTAVAX® vaccine efficacy in people ≥60 years of age. *Vaccine* 2015;33(12):1499–505.

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Table 1

Results of Scenario analysis (adopted VE reported by Morrison et al. [3]) for all the four strategies.

Strategies	ICERs
No programme	–
Age 80–84	¥3,725,947/QALY
Age 75–84	¥4,068,345/QALY
Age 70–84	¥4,302,749/QALY
Age 65–84	¥4,773,467/QALY