**Supplemental Digital Content 4. Comparison with Previous Research**

| | Sato[1] | Itzler[2] | Nakagomi[3] | Ikeda[4] | Hoshi[5] | Kurosawa | |
|---|---|---|---|---|---|---|---|
| | | | | | | Scenario 1 | Scenario 2 |
| year published | 2011 | 2013 | 2013 | 2016 | 2017 | 2020 | |
| Model | CUA (Markov) | CUA (Markov) | CBA | CBA | CUA (Markov) | CUA (Decision-tree) | CUA (Decision-tree) |
| WTP (JPY) | 6,000,000 | 5,000,000 | | | 5,000,000 | 5,000,000 | 5,000,000 |
| Time Horizon (years) | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Discount rate (%) | 5 (3) | 3 | | | 3 (5) | 2 (0-4) | 2 (0-4) |
| Perspective | HP, S | HP, S | S | S | HP, S | HP, S | HP, S |
| One-way sensitivity analysis | ✓ | ✓ | | | ✓ | | ✓ |
| Probabilistic sensitivity analysis | | 1,000 times | | | 1,000 times | | 10,000 times |
| Incidence and Direct cost | | | | | | | |
| Ambulatory visits | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| RVGE Hosp. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Convulsion Hosp. | | | | | | | ✓ |
| Encepahopathy | | | | | ✓[1] | | ✓ |
| Nosocomial | | | | | | | ✓ |
| Death | | ✓ | | | | | ✓ |
| Excess Intussusception | | | | | | | ✓ |
| Utility (country studied) | UK | Canada[2] | | | UK | UK | UK[3] |
| Vaccination | | | | | | | |
| Base Case Coverage (%) | 100 | 94 | 100 | 100 | 72 | 94 | 94 |
| Base Case cost (JPY/course) | 20,000 | 24,600 | 28,983 | 28,983 | 30,000 | 30,000 | 30,000 |
| Effectiveness (including herd effect) | No | No[4] | No | No | No | No | Yes |
| Waning | — | ○ | — | — | ○ | — | — |
| Indirect cost (only productivity loss) | Yes | Yes | No | Yes | Yes[5] | Yes | Yes |
| Result | | | | | | | |
| ICER from HP (JPY/QALY) | 9,780,524 "not cost-effective" | 4,014,001 "cost-effective" | | | 6,877,000 "slightly higher than WTP" | 6,057,281 "higher than WTP" | 3,713,488 "cost-effective" |
| ICER from S (JPY/QALY) or Benefit-Cost Ratio | 863,624 "highly cost-effective" | 2,015,122 "cost-effective" | 0.95 | "not cost-effective (i.e., not cost-saving)" | 337,000 (vaccinated alone), -4,728,294 (75% simulataneous) "cost-saving" | -7,647,099 "cost-saving" | -10,248,054 "cost-saving" |
| Break-even price (JPY/course) | 10,526 (HP) 19,163 (S) | | 18,000(S) | | | | 34,227 (HP, ICER=WTP) 17,798 (HP, ICER=0) |
| Probability under the WTP (%) | | 99(S) | | | 19.8 (HP, Vacc. cost: JPY 30,000) | | 54.8 (HP) |

[1] Calculated from the figures in the paper, the number exceeds 500.

[2] Considering parents' QALY loss.

[3] Utilities for sequelae and intussusception were quoted from other studies.

[4] Considering incomplete vaccinations.

[5] Considering vaccinated alone scenario and 75% simultaneous vaccination scenario.

CUA, cost-utility analysis; CBA, cost-benefit anaysis; WTP, willingness-to-pay; HP, healthcare payer; S, societal; ICER, Incremental Cost-Effectiveness Ratio

References


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3. Nakagomi T, Nakagomi O, Tsutsumi Y, et al. [Cost-effectiveness of rotavirus vaccination using direct non-medical costs and opportunity costs estimated from the internet survey data]. *Clinical Virology*. 2013;41:239-250. [in Japanese]

4. Ikeda T, Shiroiwa T . [Cost effectiveness of rotavirus vaccine. Japanese Health and Welfare Science Research Results Database]. Available at: https://mhlw-grants.niph.go.jp/niph/search/Download.do?nendo=2014&jigyoId=143121&bunkenNo=201420046A_upload&pdf=201420046A0026.pdf. Accessed March 13, 2020. [in Japanese]

5. Hoshi SL, Kondo M, Okubo I. Economic evaluation of routine infant rotavirus immunisation program in Japan. *Hum Vaccin Immunother*. 2017;13:1115-1125.