

## SUPPLEMENTARY MATERIAL

TABLE S 1: DETAILED BASE-CASE RESULTS OF THE COST-UTILITY ANALYSIS

Results (per capita)	No vaccination	With HRV	Difference
<b>RVGE-related events</b>			
Homecare-RVGE	0.007108	0.003425	-52%
Outpatient-RVGE	0.021259	0.010243	-52%
Inpatient-RVGE	0.015498	0.004213	-73%
RVGE-related death	0.000034	0.000001	-96%
<b>Costs; THB (USD)<sup>a</sup></b>			
<i>Vaccination costs</i>			
All perspectives <sup>b</sup>	0 (0)	141 (4)	141 (4)
<i>Total direct medical costs</i>			
All perspectives <sup>b</sup>	82 (2)	26 (1)	-56 (-2)
<i>Total direct non-medical costs</i>			
Societal perspective (base-case perspective)	57 (2)	22 (1)	-34 (-1)
Societal perspective excluding productivity losses	5 (0)	2 (0)	-3 (0)
Healthcare perspective	N/A	N/A	N/A
<i>Total costs</i>			
Societal perspective (base-case perspective)	138 (4)	190 (6)	51 (2)
Societal perspective excluding productivity losses	87 (3)	169 (5)	82 (2)
Healthcare perspective	82 (2)	167 (5)	86 (3)
<b>Discounted health outcomes</b>			
Net QALY loss	0.001120	0.000092	-0.001027
Net LY loss	0.001009	0.000037	-0.000971
<i>ICER; THB (USD) per QALY gained</i>			
Societal perspective (base-case perspective)		49,923 (1,471)	
Societal perspective excluding productivity losses		80,126 (2,361)	
Healthcare perspective		83,351 (2,456)	
<b>Undiscounted health outcomes</b>			
Net QALY loss	0.002393	0.000140	-0.002253
Net LY loss	0.002539	0.000094	-0.002445
<i>ICER; THB (USD) per QALY gained</i>			
Societal perspective (base-case perspective)		22,763 (671)	

Societal perspective excluding productivity losses	36,535 (1,076)
Healthcare perspective	38,005 (1,120)

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<sup>a</sup> The annual 2017 exchange rate (THB 33.9385/USD) was applied [59]

<sup>b</sup> The relevant estimates were the same for all the perspectives considered i.e.(i) societal perspective (base-case perspective), (ii) societal perspective excluding productivity losses, and (iii) healthcare perspective

HRV: human rotavirus vaccine; ICER: incremental cost-effectiveness ratio; LY: life-year; N/A: not applicable;

QALY: quality-adjusted life year; RVGE: rotavirus gastroenteritis; THB: Thai baht; USD: United States dollar

**TABLE S 2: DETAILED RESULTS OF THE COST-UTILITY SCENARIO**

**ANALYSES**

Results (per capita)	No vaccination	With HRV	Difference
<b>Vaccine effectiveness scenario analysis based on Tharmaphornpilas et al. 2017 [25]</b>			
<i>RVGE-related events</i>			
Homecare-RVGE	0.007108	0.003425	-52%
Outpatient-RVGE	0.021259	0.010243	-52%
Inpatient-RVGE	0.015498	0.001996	-87%
RVGE-related death	0.000034	0.000002	-93%
<i>Costs; THB (USD)</i>			
Vaccination costs	0 (0)	141 (4)	141 (4)
Total direct medical costs	82 (2)	17 (0)	-65 (-2)
Total direct non-medical costs	57 (2)	19 (1)	-38 (-1)
Total costs	138 (4)	177 (5)	39 (1)
<i>Discounted health outcomes</i>			
Net QALY loss	0.001120	0.000114	-0.001006
Net LY loss	0.001009	0.000070	-0.000939
ICER; THB (USD) per QALY gained		38,410 (1,132)	
<i>Undiscounted health outcomes</i>			
Net QALY loss	0.002393	0.000202	-0.002190
Net LY loss	0.002539	0.000176	-0.002363
ICER; THB (USD) per QALY gained		17,637 (520)	
<b>Direct medical costs scenario analysis based on Tharmaphornpilas et al. 2015 [26]</b>			
<i>Costs; THB (USD)<sup>a</sup></i>			
Vaccination costs	0 (0)	141 (4)	141 (4)
Total direct medical costs	115 (3)	34 (1)	-81 (-2)
Total direct non-medical costs	57 (2)	22 (1)	-34 (-1)
Total costs	172 (5)	197 (6)	26 (1)
<i>Discounted health outcomes</i>			
Net QALY loss	0.001120	0.000092	-0.001027
Net LY loss	0.001009	0.000037	-0.000971
ICER; THB (USD) per QALY gained		25,037 (738)	
<i>Undiscounted health outcomes</i>			
Net QALY loss	0.002393	0.000140	-0.002253
Net LY loss	0.002539	0.000094	-0.002445
ICER; THB (USD) per QALY gained		11,416 (336)	

<sup>a</sup> The annual 2017 exchange rate (THB 33.9385/USD) was applied [59].

HRV: human rotavirus vaccine; ICER: incremental cost-effectiveness ratio; LY: life-year; QALY: quality-adjusted life year; RVGE: rotavirus gastroenteritis; THB: Thai baht; USD: United States dollar

**TABLE S 3: DETAILED BASE-CASE RESULTS OF THE BUDGET**

**IMPACT ANALYSIS**

Costs; THB (USD)	Year				
	2019	2020	2021	2022	2023
<b>No vaccination</b>					
Vaccination costs	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Outpatient visit costs	50,374,674 (1,484,293)	48,947,434 (1,442,239)	47,556,018 (1,401,241)	46,200,746 (1,361,308)	44,884,097 (1,322,513)
Hospitalisation costs	199,435,083 (5,876,367)	193,791,539 (5,710,080)	188,282,845 (5,547,766)	182,917,079 (5,389,663)	177,704,230 (5,236,066)
<b>Total costs</b>	<b>249,809,757</b> <b>(7,360,660)</b>	<b>242,738,973</b> <b>(7,152,319)</b>	<b>235,838,863</b> <b>(6,949,007)</b>	<b>229,117,825</b> <b>(6,750,971)</b>	<b>222,588,327</b> <b>(6,558,579)</b>
<b>With HRV</b>					
Vaccination costs	457,706,645 (13,486,355)	444,662,724 (13,102,015)	431,990,534 (12,728,628)	419,679,482 (12,365,882)	407,719,276 (12,013,474)
Outpatient visit costs	40,384,255 (1,189,925)	31,890,443 (939,654)	27,316,019 (804,868)	24,045,930 (708,515)	21,519,565 (634,075)
Hospitalisation costs	177,182,966 (5,220,707)	117,696,167 (3,467,925)	85,098,706 (2,507,439)	61,541,865 (1,813,335)	48,173,521 (1,419,436)
<b>Total costs</b>	<b>675,273,866</b> <b>(19,896,986)</b>	<b>594,249,334</b> <b>(17,509,593)</b>	<b>544,405,260</b> <b>(16,040,935)</b>	<b>505,267,278</b> <b>(14,887,732)</b>	<b>477,412,362</b> <b>(14,066,985)</b>
<b>Difference HRV versus no vaccination</b>					
Vaccination costs	457,706,645 (13,486,355)	444,662,724 (13,102,015)	431,990,534 (12,728,628)	419,679,482 (12,365,882)	407,719,276 (12,013,474)
Outpatient visit costs	-9,990,419 (-294,368)	-17,056,991 (-502,585)	-20,239,999 (-596,373)	-22,154,816 (-652,793)	-23,364,532 (-688,437)
Hospitalisation costs	-22,252,117 (-655,660)	-76,095,372 (-2,242,155)	-103,184,139 (-3,040,327)	-121,375,214 (-3,576,328)	-129,530,708 (-3,816,630)
<b>Total difference</b>	<b>425,464,109</b> <b>(12,536,326)</b>	<b>351,510,361</b> <b>(10,357,275)</b>	<b>308,566,397</b> <b>(9,091,928)</b>	<b>276,149,452</b> <b>(8,136,761)</b>	<b>254,824,035</b> <b>(7,508,406)</b>
<b>Cumulative difference</b>	<b>425,464,109</b> <b>(12,536,326)</b>	<b>776,974,470</b> <b>(22,893,601)</b>	<b>1,085,540,867</b> <b>(31,985,529)</b>	<b>1,361,690,319</b> <b>(40,122,289)</b>	<b>1,616,514,354</b> <b>(47,630,695)</b>

HRV: human rotavirus vaccine; THB: Thai baht; USD: United States dollar

**TABLE S 4: DETAILED RESULTS OF THE BUDGET IMPACT**

**SCENARIO ANALYSIS**

Costs; THB (USD)	Year				
	2019	2020	2021	2022	2023
<b>No vaccination</b>					
Vaccination costs	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Outpatient visit costs	50,374,674 (1,484,293)	48,947,434 (1,442,239)	47,556,018 (1,401,241)	46,200,746 (1,361,308)	44,884,097 (1,322,513)
Hospitalisation costs	199,435,083 (5,876,367)	193,791,539 (5,710,080)	188,282,845 (5,547,766)	182,917,079 (5,389,663)	177,704,230 (5,236,066)
<b>Total costs</b>	<b>249,809,757</b> <b>(7,360,660)</b>	<b>242,738,973</b> <b>(7,152,319)</b>	<b>235,838,863</b> <b>(6,949,007)</b>	<b>229,117,825</b> <b>(6,750,971)</b>	<b>222,588,327</b> <b>(6,558,579)</b>
<b>With HRV</b>					
Vaccination costs	274,623,987 (8,091,813)	303,140,639 (8,932,058)	334,618,429 (9,859,553)	369,364,838 (10,883,358)	407,719,276 (12,013,474)
Outpatient visit costs	44,380,423 (1,307,672)	37,919,976 (1,117,314)	33,182,018 (977,710)	28,839,191 (849,749)	24,615,081 (725,285)
Hospitalisation costs	186,083,813 (5,482,971)	146,367,444 (4,312,726)	118,379,865 (3,488,070)	93,076,454 (2,742,503)	71,565,955 (2,108,695)
<b>Total costs</b>	<b>505,088,223</b> <b>(14,882,456)</b>	<b>487,428,060</b> <b>(14,362,098)</b>	<b>486,180,312</b> <b>(14,325,333)</b>	<b>491,280,483</b> <b>(14,475,610)</b>	<b>503,900,312</b> <b>(14,847,454)</b>
<b>Difference HRV versus no vaccination</b>					
Vaccination costs	274,623,987 (8,091,813)	303,140,639 (8,932,058)	334,618,429 (9,859,553)	369,364,838 (10,883,358)	407,719,276 (12,013,474)
Outpatient visit costs	-5,994,251 (-176,621)	-11,027,458 (-324,925)	-14,374,000 (-423,531)	-17,361,555 (-511,559)	-20,269,017 (-597,228)
Hospitalisation costs	-13,351,270 (-393,396)	-47,424,095 (-1,397,354)	-69,902,979 (-2,059,696)	-89,840,625 (-2,647,160)	-106,138,275 (-3,127,371)
<b>Total difference</b>	<b>255,278,465</b> <b>(7,521,796)</b>	<b>244,689,087</b> <b>(7,209,779)</b>	<b>250,341,450</b> <b>(7,376,326)</b>	<b>262,162,658</b> <b>(7,724,639)</b>	<b>281,311,984</b> <b>(8,288,875)</b>
<b>Cumulative difference</b>	<b>255,278,465</b> <b>(7,521,796)</b>	<b>499,967,552</b> <b>(14,731,575)</b>	<b>750,309,002</b> <b>(22,107,901)</b>	<b>1,012,471,659</b> <b>(29,832,540)</b>	<b>1,293,783,644</b> <b>(38,121,415)</b>

HRV: human rotavirus vaccine; THB: Thai baht; USD: United States dollar