

Navigating the unprecedented range of rotavirus vaccine options now available to Gavi-supported countries

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Background

An unprecedented range of three vaccines in nine presentations is now available to Gavi-supported countries for rotavirus vaccination, offering different number of doses per schedule, wastage rates, cold chain requirements, and prices per dose. All rotavirus vaccine presentations supported by Gavi have been prequalified by WHO or are expected to be prequalified in the next 12 months and are considered safe and efficacious.

The country-specific context significantly affects the cost-benefit and programmatic convenience of each option, and this abstract offers a summary of cost-related considerations to support countries in their assessment.

Method

Using data from the package inserts provided for WHO prequalified vaccines, Gavi's Detailed Product Profiles, WHO recommended wastage rates, and manufacturer's information on prices, we simulated the effects of switching across different products for countries that pay a fixed low price per schedule (initial self-financing countries, asked to co-finance at US\$ 0.40 per *schedule*) and countries that pay a fraction of the actual price per dose (countries in preparatory or accelerated transition). We assessed the impact on direct financial cost of vaccine co-financing to the country. We also identified and qualified the major programmatic changes that could impact indirect economic cost of rotavirus routine vaccination. We ran the analysis assuming fully vaccinated children.

Results

Countries in "initial self-financing" are disproportionately affected by wastage rates and do not benefit from a lower price per dose as their co-financing share is set at US\$ 0.40 per *schedule* regardless of the chosen vaccine. Countries nearing "transition" benefit more from lower prices, even if higher wastage rates can partially offset the advantage of a comparatively lower price per dose. In addition, the indirect economic costs of more complex cold chain or administration requirements are also relevant country-specific factors to take into consideration.

Conclusion

In the assessment of their options for rotavirus vaccination supported by Gavi, countries in "initial self-financing" may focus more on estimating wastage rates and indirect programmatic costs specific to their countries. Countries in preparatory and accelerated transition may have a greater incentive to pick vaccines with lowest prices per dose.

Estimated impact on financial cost of vaccine co-financing¹:

Switch option¹	<i>Programmatic changes that impact cost³</i>	<i>Drivers of direct financial cost</i>	Country in initial self-financing	Country in transition, or fully self-financing
Rotarix > Rotavac frozen in 5 doses/vial	Need for more freezer capacity Less need for refrigerated capacity	+ 25% wastage (from 5% to 30% in year 1) - 63% price per dose (from 2.29 to 0.85\$) + 30% doses per fully vaccinated child (from 2 to 3)	Likely more costly	Likely less costly
Rotarix > Rotavac frozen in 10 doses/vial	Need for more freezer capacity Less need for refrigerated capacity	+ 45% wastage (from 5% to 50% in year 1) - 63% price per dose (from 2.29 to 0.85\$) + 30% doses per fully vaccinated child (from 2 to 3)	Likely more costly	Marginal difference ²
Rotarix > Rotasiil lyophilised in 1 dose/vial ²	Need for more refrigerated capacity Increased administration complexity ⁴	- 32 % price per dose (from 2.29 to 1.55\$) + 30% doses per fully vaccinated child (from 2 to 3)	No difference	Marginal difference
Rotarix > Rotasiil lyophilised in 2 doses/vial	Similar refrigerated capacity needs Increased administration complexity ⁴	+ 5% wastage (from 5% to 10% in year 1) - 59 % price per dose (from 2.29 to 0.95\$) + 30% doses per fully vaccinated child (from 2 to 3)	Marginal difference	Likely less costly
Rotarix > Rotavac 5D liquid in single dose/vial ²	Need for more refrigerated capacity	- 31% price per dose (from 2.29 to 1.58\$) + 30% doses per fully vaccinated child (from 2 to 3)	Marginal difference	Marginal difference
Rotarix > Rotavac 5D liquid in 5 doses/vial ²	Less need for refrigerated capacity	+ 5% wastage (from 5% to 10% in year 1) - 50% price per dose (from 2.29 to 1.14\$) + 30% doses per fully vaccinated child (from 2 to 3)	Marginal difference	Likely less costly
Rotarix > Rotasiil liquid in plastic tube strip of 5 single doses ²	Need for more refrigerated capacity	- 32% price per dose (from 2.29 to 1.55\$) + 30% doses per fully vaccinated child (from 2 to 3)	No difference	Marginal difference

¹ Additional switch options would be added to the poster or a presentation

² Less than 10% difference