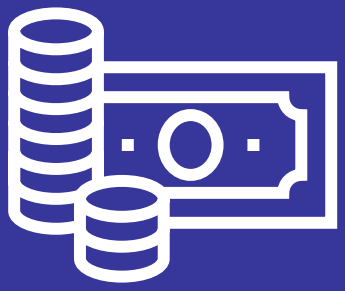
Was the switch from ROTARIX to ROTAVAC cost-saving for Ghana?



Short answer: **yes**

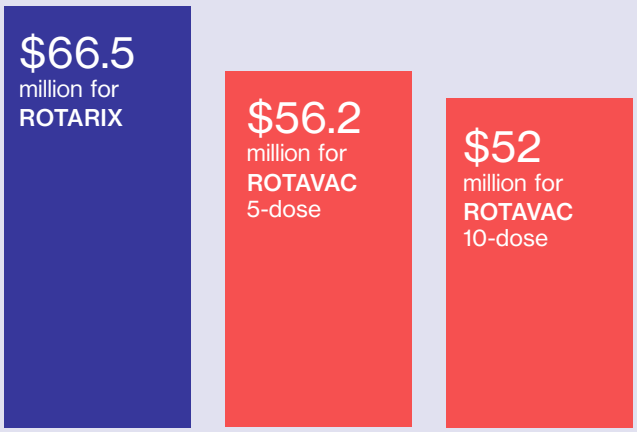
In 2020, Ghana switched from using ROTARIX® to ROTAVAC® in its national immunization program. PATH worked with Ghana Health Service and the University of Ghana to analyze the economic implications of this switch. This fact sheet is part of a series on key results of these analyses, collectively providing a case study on Ghana's rotavirus vaccine product switch. (*Manuscript pending submission to a peer-reviewed journal.*)

The Ghana Ministry of Health's decision to switch from ROTARIX to ROTAVAC was primarily driven by a desire for increased affordability and sustainability of their rotavirus vaccination program when support from Gavi, the Vaccine Alliance, ends. A cost-effectiveness analysis conducted by PATH, Ghana Health Service, and the University of Ghana helped validate this decision after the switch occurred.

A cost-saving solution

Accounting for the cost of the switch, costs of procuring and delivering each vaccine course, assumed similar health impact of the two vaccines, and the respective economic benefits of each vaccine, the analysis found that switching from ROTARIX to ROTAVAC was ***cost-saving*** for Ghana. While both vaccines are highly cost-effective compared to no vaccination, using ROTAVAC will save the government approximately US$20 million in vaccine procurement costs over the next decade, even after the country stops receiving Gavi support. While the supply chain and delivery costs per course were higher for ROTAVAC due to its third dose, the lower cost of the vaccine outweighs these costs, resulting in a net $10 million in savings for Ghana over 10 years.

Estimated total rotavirus vaccination program costs from 2020 to 2029 (in US$)



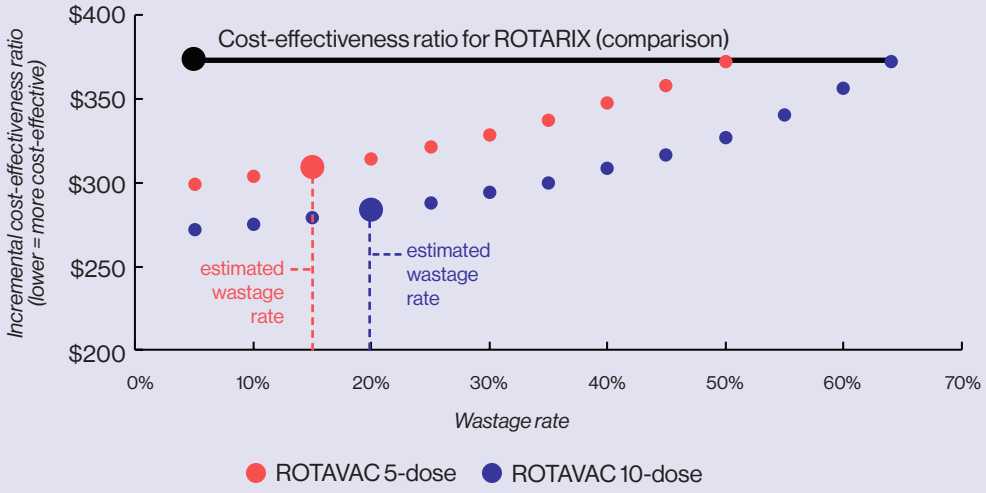
Estimated cost per DALY* averted (in US$) from the societal perspective

* DALY = disability-adjusted life-year, or one year of life lost due to illness or premature death.

The wastage rate question

A concern regarding the switch to ROTAVAC was whether the relatively higher vaccine wastage rate would impact the cost-effectiveness of the program. Higher wastage rates are expected with multidose vials such as ROTAVAC compared to single-dose vaccines such as ROTARIX. However, the analysis found that, even accounting for potential wastage rates up to 50 percent (for 5-dose ROTAVAC) or 64 percent (for 10-dose ROTAVAC), both ROTAVAC presentations remain more cost-effective than ROTARIX. Programmatic wastage rates for 5-dose vials of ROTAVAC are estimated to be around 15 percent, so ROTAVAC is very likely more cost-effective than ROTARIX. However, this estimated wastage rate does not include the use of an open-vial policy, which Gavi has recently approved for ROTAVAC. If this policy is implemented in Ghana, wastage rates could be reduced further.

ROTAVAC is more cost-effective than ROTARIX, even at potential wastage rates up to 50 percent and 64 percent (for 5- and 10-dose vials, respectively)



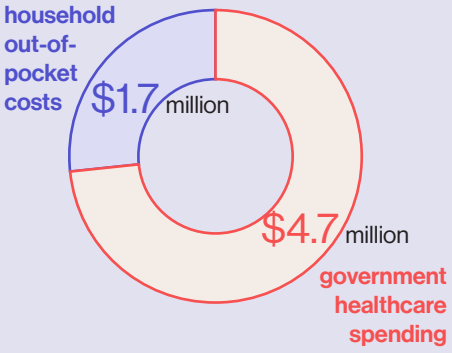
Consistent health benefits

Ghana's use of ROTAVAC is projected to maintain the vaccination program's significant health impact, continuing to reduce rotavirus-related deaths and illness among children younger than five years and the associated healthcare costs. The analysis found that continued rotavirus vaccination with any of the vaccines is expected to avert $6.4 million in healthcare costs over the next decade.

There are no clinical data for Ghana to evaluate the differences in the burden of rotavirus-specific or all-cause gastroenteritis with ROTAVAC compared to ROTARIX, and so the analysis assumed that the two vaccines have similar efficacy and health impact. (Separate, not comparative, clinical studies have found similar efficacy for ROTARIX and ROTAVAC.) A health impact analysis conducted in Palestine before and after their switch from ROTARIX to ROTAVAC found no change in the burden of rotavirus-specific or all-cause gastroenteritis because of the vaccine switch,[1] so it is likely that Ghana's switch also maintained the same health impact.

[1] PATH. The Health Benefits of Rotavirus Immunization for Children in Palestine: Results of a Vaccine Impact Analysis. 2021. Available at: https://www.path.org/resources/health-benefits-rotavirus-immunization-children-palestine-results-vaccine-impact-analysis/

Rotavirus vaccination in Ghana will avert $6.4 million in healthcare costs over 10 years



Learn more about Ghana's rotavirus vaccine product switch with the three other fact sheets in this series:

- Why did Ghana switch to a different rotavirus vaccine?
- What did Ghana's switch to ROTAVAC require?
- Did Ghana's switch to ROTAVAC free cold chain capacity?

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