

Potential of typhoid conjugate vaccines in Rwanda

Typhoid, a serious enteric fever spread through contaminated food and water, is a substantial public health issue that disproportionately impacts children and marginalized populations in Asia and sub-Saharan Africa. The Global Burden of Disease (GBD) study estimates that, in 2017, there were nearly 11 million typhoid cases and more than 116,000 typhoid deaths worldwide.¹ Additionally, strains of drug-resistant typhoid are spreading, causing global concern.²

TYPHOID CONJUGATE VACCINES

Typhoid vaccination can reduce the need for antibiotics, slow expansion of drug-resistant strains, and save lives. Newly licensed and World Health Organization (WHO)-prequalified typhoid conjugate vaccines (TCVs) have several advantages over earlier typhoid vaccines. They:

- provide longer-lasting protection;
- require only one dose; and
- are suitable for young children over 6 months.

These qualities will allow better protection for younger children and expanded coverage through inclusion in routine childhood immunization programs.

WHO RECOMMENDATION AND GAVI SUPPORT

In March 2018, WHO recommended that typhoid-endemic countries introduce prequalified TCVs into routine childhood immunization programs as a single dose for infants and children over 6 months of age, accompanied by catch-up vaccination campaigns for children up to 15 years of age, where feasible. Additionally, WHO recommended prioritizing countries with a high burden of disease and/or a growing burden of drug-resistant typhoid, and in response to confirmed typhoid outbreaks. Gavi, the Vaccine Alliance has earmarked US\$85 million to support the introduction of TCVs into routine immunization programs and is accepting applications for financial support, with introductions anticipated as soon as 2019.



AN OPPORTUNITY FOR RWANDA

TCVs could have a substantial benefit in Rwanda, where typhoid inflicts a significant public health burden. The latest GBD analysis estimates that, in 2017, Rwanda had:

- **16,549 typhoid cases** or **132 cases per 100,000 population**, 60 percent of which were among children under 15 years of age; and
- **239 typhoid deaths**, 69 percent of which were among children under 15 years of age.¹

Typhoid likely also imposes an economic burden in Rwanda. While costs of illness have not yet been evaluated for Rwanda, an analysis from neighboring Tanzania found that the average costs of a typhoid case borne by families can amount to two months of average family income.³ Preliminary findings from an economic analysis predict that, even in the absence of a Gavi subsidy, a catch-up campaign followed by routine childhood immunization with TCVs would potentially be cost-effective in Rwanda.⁴

References

1. Global Burden of Disease. *The Lancet*. 2018.
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3. Riewpaiboon A, Piatti M, Ley B, et al. Cost of illness due to typhoid fever in Pemba, Zanzibar, East Africa. *Journal of Health, Population and Nutrition*. 2014;32(3):377-385.
4. Bilcke J, et al. Setting global performance standards for a cost-effective typhoid conjugate vaccine strategy: a modelling study. *In prep*.

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