

Potential of typhoid conjugate vaccines in India

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.



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AN OPPORTUNITY FOR INDIA

TCVs could have a substantial benefit in India, where typhoid is hyperendemic and inflicts a significant public health burden. The GBD estimates that, in 2017, India had:

- **5.8 million typhoid cases or 424 cases per 100,000 population**, 58 percent of which were among children under 15 years of age; and
- **58,552 typhoid deaths**, 58 percent of which were among children under 15 years of age.¹

Typhoid also imposes an economic burden in India. A study in Kolkata, India, found that the total treatment costs per blood culture-confirmed typhoid hospitalization averaged US\$129, or 35 percent of average monthly household income.³ An economic analysis predicted that routine TCV infant vaccination would potentially be very cost-effective and cost-saving in Kolkata and Delhi, respectively.⁴

References

1. Global Burden of Disease. *The Lancet*. 2018.
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4. Antillón M, Bilcke J, Paltiel AD, et al. Cost-effectiveness analysis of typhoid conjugate vaccines in five endemic low- and middle-income settings. *Vaccine*. 2017;35(27):3506-3514.

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