

## The potential of typhoid conjugate vaccines in Malawi

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 2016, there were nearly 12 million typhoid cases and more than 128,000 typhoid deaths worldwide.<sup>1</sup> Additionally, strains of drug-resistant typhoid are spreading, causing global concern.<sup>2</sup>

### TYPHOID CONJUGATE VACCINES

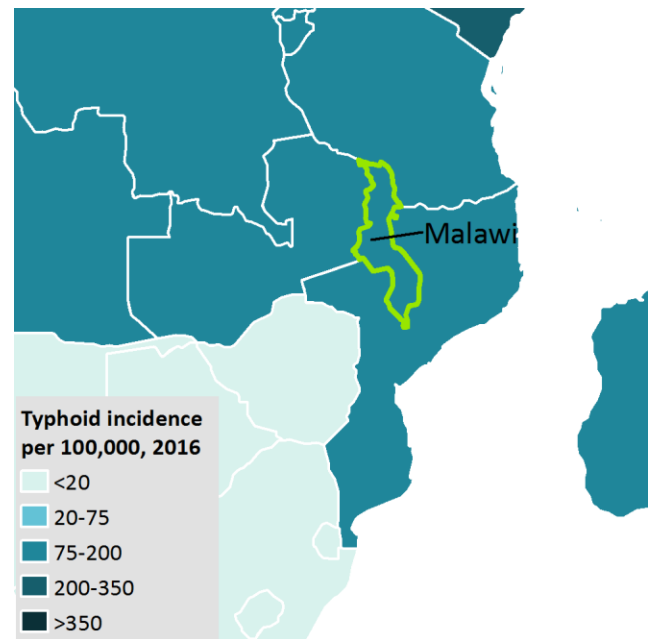
Typhoid vaccination can reduce the need for antibiotics, slow expansion of drug-resistant strains, and save lives. Newly licensed and World Health Organization (WHO)-prequalified typhoid conjugate vaccines (TCVs) have several advantages over earlier typhoid vaccines. They:

- 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 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.



According to GBD estimates, Malawi had a typhoid incidence rate of 90 cases per 100,000 population in 2016.

### AN OPPORTUNITY FOR MALAWI

TCVs could have a substantial benefit in Malawi, where typhoid inflicts a significant health burden. The GBD estimates that, in 2016, Malawi had:

- **16,144 typhoid cases** or **90 cases per 100,000 population**, 64 percent of which were among children under 15; and
- **227 typhoid deaths**, 67 percent of which were among children under 15.<sup>1</sup>

Additionally, Malawi has seen a significant increase in multidrug-resistant typhoid since 2011, resulting in a sharp rise in overall typhoid incidence starting in 2013.<sup>3</sup>

Typhoid also imposes an economic burden. Analyses from settings in sub-Saharan Africa have found that the average cost of a typhoid case borne by families can amount to two months of family income.<sup>4</sup> Preliminary findings from an economic analysis



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Typhar-TCV® typhoid conjugate vaccine was prequalified by the World Health Organization in December 2017.



Sabin Vaccine Institute

Four-year-old Golden Kondowe was the first child in Africa to receive a vaccine as part of the TyVAC effectiveness study in Malawi, February 2018.

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 Malawi.<sup>5</sup>

## TyVAC EFFECTIVENESS STUDY IN MALAWI

In order to build evidence of the effectiveness of TCVs in protecting children from typhoid, researchers with the Typhoid Vaccine Acceleration Consortium (TyVAC) are conducting three different studies in Bangladesh, Malawi, and Nepal. In Malawi, TyVAC and project partners are studying how well TCVs prevent typhoid in children between 9 months and 12 years of age as well as the safety, impact, and cost of the vaccine. While the WHO already recommends TCV introduction in all typhoid-endemic countries, this additional evidence will help inform ongoing decisions about TCV vaccination in low- and middle-income countries.

## REFERENCES

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Learn more and join the effort at [www.takeontyphoid.org](http://www.takeontyphoid.org).

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