

## Potential of typhoid conjugate vaccines in Sudan

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

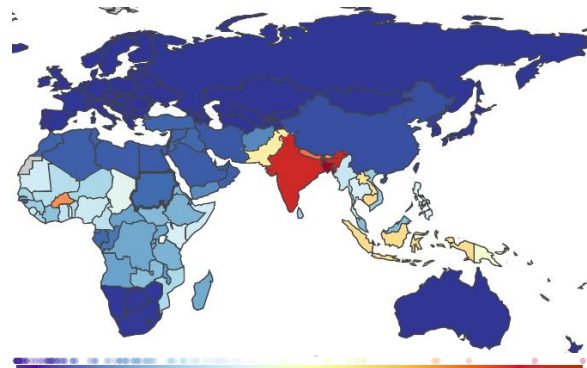
Typhoid vaccination can reduce the need for antibiotics, slow expansion of drug-resistant strains, and save lives. Newly licensed typhoid conjugate vaccines (TCVs) have several advantages over earlier typhoid vaccines. They:

- provide longer-lasting protection up to 5 years;
- 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 SAGE REVIEW

In October 2017, the World Health Organization's Strategic Advisory Group of Experts (SAGE) on Immunization recommended that typhoid-endemic countries introduce TCVs in 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.<sup>3</sup> SAGE recommended prioritizing TCV introduction in countries with a high burden of disease and/or evidence of antimicrobial resistance (AMR). TCVs were also recommended in response to typhoid outbreaks and in groups at high risk or with high transmission potential.



Typhoid incidence rates in high-burden regions, [GBD 2016](#)

### AN OPPORTUNITY FOR SUDAN

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

- 18,524 typhoid cases, of which 54 percent were under 15 years of age; and
- 252 typhoid deaths, of which 63 percent were under 15 years of age.

Typhoid likely also imposes an economic burden in Sudan. While costs of illness have not yet been evaluated for Sudan, analyses from other settings in sub-Saharan Africa, including Tanzania, have found that the average costs of a typhoid case borne by families can amount to two months of average family income<sup>4</sup> and that TCVs can be a cost-effective intervention.

### References

- <sup>1</sup> [Global Burden of Disease](#). *The Lancet*. 2017.
- <sup>2</sup> Wong VK, Baker S, Pickard DJ, et al. [Phylogeographical analysis of the dominant multidrug-resistant H58 clade of Salmonella Typhi identifies inter- and intracontinental transmission events](#). *Nature Genetics*. 2015;47:632-639.
- <sup>3</sup> [October 2017 SAGE meeting summary](#).
- <sup>4</sup> Riewpaiboon A, Piatti M, Ley B, et al. [Cost of illness due to typhoid fever in Pemba, Zanzibar, East Africa](#). *J Health Popul Nutr*. 2014;32(3):377-385.