Burden of Typhoid in

## **Benin**

Benin is a typhoid-endemic country. The Global Burden of Disease 2021 study estimated that Benin experienced at least:

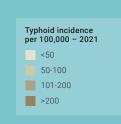
**15,855 typhoid cases** (117 cases per 100,000)

289 typhoid deaths

23,398 disability-adjusted life-years lost to typhoid<sup>1</sup>

Typhoid was one of the most common bacterial pathogens found in a recent study identifying bloodstream infections from a hospital in Benin. Typhoid was also the most common pathogen isolated in children 5-15 years old.<sup>2</sup>

While typhoid is rarely fatal, the recovery is long and difficult. The disease steals time, money, and productivity from those infected and their families and is associated with numerous long-term complications.



Benin

Most typhoid cases in Benin occur in children **younger than 15 years old.** 

**TYPHOID CASES IN BENIN BY AGE (2021)** 



**Drug-resistant typhoid strains** are a growing problem in Benin, regionally, and across the globe.



Global data show that multidrugresistant (MDR) typhoid prevalence has **increased dramatically since** 1992.<sup>3</sup>



A study of 53 *Salmonella* Typhi isolates found that **nearly 40% were multidrug-resistant** and 25% had decreased susceptibility to ciprofloxacin, the preferred antibiotic treatment in the region.<sup>2</sup>



Drug-resistant typhoid is more difficult to treat and forces the use of more expensive and less readily-available treatment options.

## Typhoid conjugate vaccines (TCVs) in Benin

The World Health Organization (WHO) recommends the introduction of prequalified TCVs be prioritized in countries with a high burden of typhoid disease or a high burden of drug-resistant typhoid. Support for introduction from Gavi, the Vaccine Alliance is available now. TCVs:



Are highly effective and safe for children as young as **6 months** of age;



Require a **single dose** to prevent 79-85% of typhoid cases in children;<sup>4</sup>



Offer strong protection for **at least 4 years**; and



Can be **co-administered** with measles-rubella and yellow fever vaccines.<sup>5,6</sup>

Findings from an economic analysis predict that, even in the absence of a Gavi subsidy, a catch-up campaign with TCV could be cost-effective in Benin.<sup>7</sup>

## Let's Take on Typhoid in Benin

- Typhoid is endemic in Benin, with more than 15,000 cases per year.
- Benin's burden of typhoid is most heavily borne by children younger than 15 years of age.
- Data show an increase in drugresistant typhoid in Benin, regionally, and globally.
- WHO-recommended for routine immunization as part of a costeffective, integrated approach to typhoid prevention and control alongside safe water, sanitation, and hygiene interventions.
- Gavi support for TCV introduction is available now.
- 1. Institute for Health Metrics and Evaluation. Global Burden of Disease. 2021. Accessed via: ghdx.healthdata.org/gbd-results-tool.
- 2. Ombelet S, Kpossou G, Kotchare C, et al. Blood culture surveillance in a secondary care hospital in Benin: Epidemiology of bloodstream infection pathogens and antimicrobial resistance. BMC Infectious Diseases. 2022;22:119.
- 3. 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(6):632-639.
- 4. Patel PD, Patel P, Liang Y, et al. Safety and efficacy of a typhoid conjugate vaccine in Malawian children. New England Journal of Medicine. 2021;385(12):1104-1115.
- 5. Sirima SB, Ouedraogo A, Barry N, et al. Safety and immunogenicity of co-administration of meningococcal type A and measles-rubella vaccines with typhoid conjugate vaccine in children aged 15-23 months in Burkina Faso. International Journal of Infectious Diseases. 2021;102:517-526.
- 6. Sirima SB, Ouedraogo A, Barry N, et al. Safety and immunogenicity of Vi-typhoid conjugate vaccine co-administration with routine 9-month vaccination in Burkina Faso: A randomized controlled phase 2 trial. International Journal of Infectious Diseases. 2021;108:465-472.
- 7. Bilcke J, Antillón M, Pieters Z, et al. Cost-effectiveness of routine and campaign use of typhoid Vi-conjugate vaccine in Gavi-eligible countries: A modelling study. Lancet Infectious Disease. 2019;19(7):728-739



