

Burden of Typhoid in **Benin**

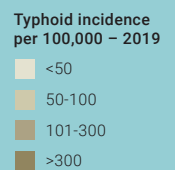
Benin is a typhoid-endemic country. The Global Burden of Disease 2019 study estimated that Benin experienced at least:

14,833 typhoid cases (117 cases per 100,000)
261 typhoid deaths
20,533 disability-adjusted **life-years lost** to typhoid¹



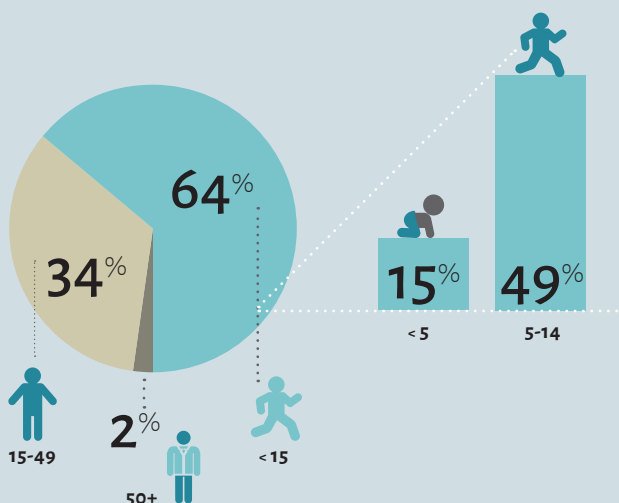
Typhoid was one of the most common bacterial pathogens found in a recent study identifying bloodstream infections from a hospital in Benin. Typhoid was also the most common pathogen isolated in children 5-15 years old.²

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.



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

TYPHOID CASES IN BENIN BY AGE (2019)



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



Global data show that multidrug-resistant (MDR) typhoid prevalence has **increased dramatically since 1992**.³



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.²



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.

Prequalified TCVs are highly effective and safe for children as young as 6 months of age. Recent data from Malawi show TCV is safe and 84% effective in preventing typhoid.⁴ TCVs:



Require **one dose**;



Are **more effective and may be longer-lasting** than other typhoid vaccines; and



Can be **co-administered** with measles-rubella and yellow fever vaccines.^{5,6}

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.**⁷

Let's Take on Typhoid in Benin

- ✓ Typhoid is endemic in Benin, with more than **14,000** 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 drug-resistant typhoid in Benin, regionally, and globally.
- ✓ **TCVs** are safe, effective, and WHO-recommended for routine immunization as part of a cost-effective, 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. 2019. Accessed via: ghdx.healthdata.org/gbd-results-tool.
2. Ombelet S, Kpoussou 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.