

Burden of Typhoid in Nigeria

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

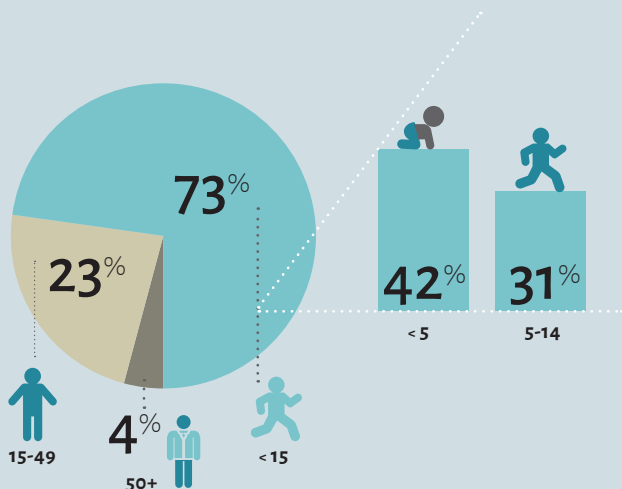
- 238,887 typhoid cases** (103 cases per 100,000)
- 4,151 typhoid deaths**
- 336,397 disability-adjusted life-years lost** to typhoid¹

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 Nigeria occur in children **younger than 15 years old**.

TYPHOID CASES IN NIGERIA BY AGE (2021)



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



Global data show that multidrug-resistant (MDR) typhoid prevalence has **increased dramatically since 1992**.²



An analysis of typhoid samples from Lagos found that **more than 80% of these samples were MDR**. Increasing rates of fluoroquinolone and cephalosporin resistance were seen as well.³



Another study of typhoid cases in children younger than 5 years old in Kano and the Federal Capital Territory found that **40% were MDR**.⁴



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 Nigeria

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;⁵



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



Can be **co-administered** with measles-rubella and yellow fever vaccines.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 Nigeria.⁷

Let's Take on Typhoid in Nigeria

- ✓ Typhoid is endemic in Nigeria, with more than **238,000** cases per year.
- ✓ Nigeria'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 Nigeria, 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. 2021. Accessed via: ghdx.healthdata.org/gbd-results-tool.
2. 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.
3. Akinyemi KO, Oyefolu AOB, Mutiu WB, et al. Typhoid fever: Tracking the trend in Nigeria. *The American Journal of Tropical Medicine and Hygiene*. 2018;99(Suppl 3):41-47.
4. Obaro SK, Hassan-Hanga F, Olateju EK, et al. *Salmonella* bacteremia among children in Central and Northwest Nigeria, 2008-2015. *Clinical Infectious Diseases*. 2015;61(Suppl 4):S325-S331.
5. 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.
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