

Burden of Typhoid in

Côte d'Ivoire

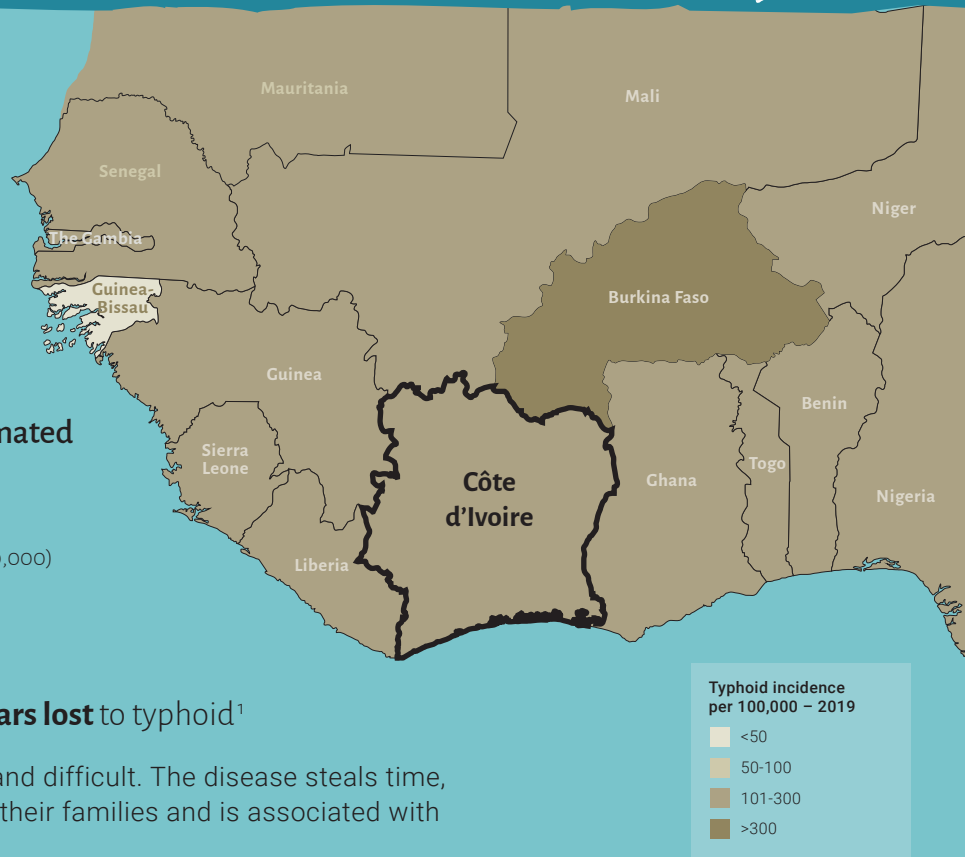
Côte d'Ivoire is a typhoid-endemic country. The Global Burden of Disease 2019 study estimated that Côte d'Ivoire experienced at least:

29,115 typhoid cases (111 cases per 100,000)

475 typhoid deaths

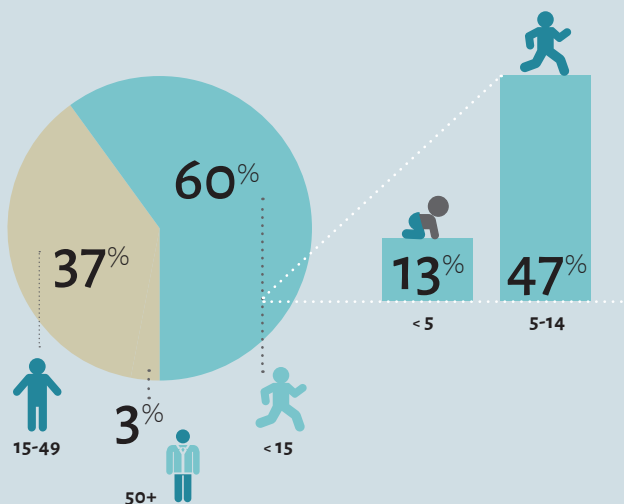
36,964 disability-adjusted **life-years lost** to typhoid¹

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 Côte d'Ivoire occur in children **younger than 15 years old.**

TYPHOID CASES IN CÔTE D'IVOIRE BY AGE (2019)



The risk of typhoid may be increasing in Côte d'Ivoire.



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



While drug-resistant typhoid has not been isolated in Côte d'Ivoire, it has been found in other West African countries, including Ghana³. **Diseases such as typhoid can easily cross borders**, and as drug-resistant typhoid becomes more common, it has the potential to spread to Côte d'Ivoire.



In Côte d'Ivoire, **30% of the population does not have access to basic water services** and **65% do not have access to basic sanitation infrastructure**.⁴ This drastically increases the risk of typhoid infections.



Rapid urbanization has increased the number of people living in urban slums, placing **even more pressure on fragile water and sanitation infrastructure**.⁴ This can increase the risk of typhoid.

Typhoid conjugate vaccines (TCVs) in Côte d'Ivoire

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.⁶ TCVs:



Require **one dose**;



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



Can be **co-administered** with measles-rubella, yellow fever, and meningococcal A vaccines.^{7,8}

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 Côte d'Ivoire**.⁸

Let's Take on Typhoid in Côte d'Ivoire

- ✓ Typhoid is endemic in Côte d'Ivoire, with more than **29,000** cases per year.
- ✓ Côte d'Ivoire's burden of typhoid is most heavily borne by children **younger than 15** years of age.
- ✓ Increasing urbanization is poised to add increased pressure on already fragile water and sanitation infrastructure, raising typhoid risks in Côte d'Ivoire.
- ✓ **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. 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. Park SE, Pham DT, Boinett C, et al. The phylogeography and incidence of multi-drug resistant typhoid fever in sub-Saharan Africa. *Nature Communications*. 2018;9(1):5094.
4. Sustainable Development Report. Côte d'Ivoire. 2020. Available at: <https://dashboards.sdgindex.org/profiles/cote-d-ivoire/indicators>.
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 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.
7. 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.
8. 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.