>200

Burden of Typhoid in

Senegal

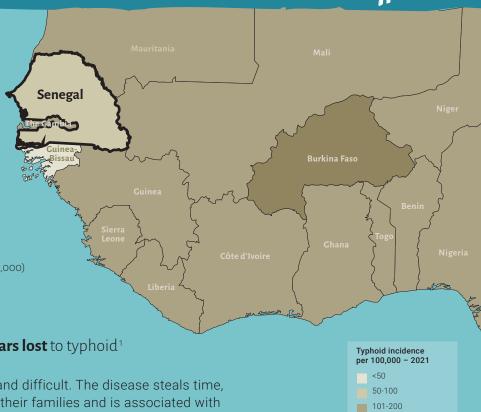
Senegal is a typhoid-endemic country. The Global Burden of Disease 2021 study estimated that Senegal experienced at least:

15,374 typhoid cases (97 cases per 100,000)

295 typhoid deaths

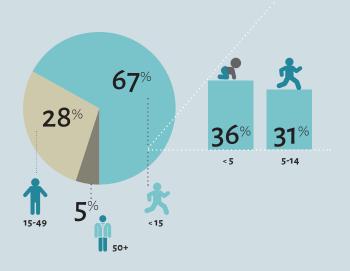
23,321 disability-adjusted **life-years lost** to typhoid¹

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.





TYPHOID CASES IN SENEGAL BY AGE (2021)



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



Global data show that multidrugresistant (MDR) typhoid prevalence has **increased dramatically since** 1992.²



While drug-resistant typhoid has not been isolated in Senegal,³ it has been **found in other West African countries**, including Ghana.²



Diseases such as typhoid can easily cross borders, and as drug-resistant typhoid becomes more common, it has the potential to spread to Senegal.



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 Senegal

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;³



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



Can be **co-administered** with measles-rubella and yellow fever vaccines. 4,5

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 Senegal.⁶

Let's Take on Typhoid in Senegal

- Typhoid is endemic in Senegal, with more than 15,000 cases per year.
- Senegal's burden of typhoid is most heavily borne by children younger than 15 years of age.
- Data show a global increase in *drug-resistant typhoid*, which could spread to Senegal.
- 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. 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):509
- 3. Al-Emran HM, Eibach D, Krumkamp R, et al. A multicountry molecular analysis of Salmonella enterica Serovar Typhi with reduced susceptibility to ciprofloxacin in sub-Saharan Africa. Clinical Infectious Diseases. 2016;62(Suppl 1):S42-S46.
- 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



