

Burden of Typhoid in

Kenya

Typhoid, a serious disease marked by fever and fatigue that is caused by the bacteria *Salmonella Typhi*, is endemic in Kenya. The Global Burden of Disease study estimated that, in 2019, there were at least:

126,098 typhoid cases (251 cases per 100,000)
1,568 typhoid deaths
113,969 disability-adjusted life-years (DALYs), a measure of healthy years of life lost to either illness or early death, lost to typhoid¹

A separate study of blood culture-confirmed typhoid incidence in Kibera, an urban settlement in Nairobi, estimated an incidence of 822 cases per 100,000 population, with extremely high rates (2,243 cases per 100,000) among children 2 to 4 years of age.²

Typhoid is spread by fecally contaminated food and water. Limited water, sanitation, and hygiene (WASH) infrastructure greatly increases the risk of typhoid. In Kenya, 50% of rural households have no toilet facilities.³

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

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



An analysis of typhoid samples from three different parts of Kenya found that **82.4% of the samples were resistant to all five of the commonly available drugs:** ampicillin, chloramphenicol, tetracycline, streptomycin, and cotrimoxazole.⁴



Another analysis of typhoid samples from outbreaks in Kenya from 1988-2008 found a **dramatic increase in the number and percentage of multidrug-resistant (MDR) *S. Typhi* isolates.** The majority (60.4%) were multiply resistant to most commonly available drugs.⁵ Genetic analysis revealed that MDR typhoid strains in Kenya belonged to the same lineage linked to MDR typhoid across Asia, suggesting intercontinental spread of the clone.⁵

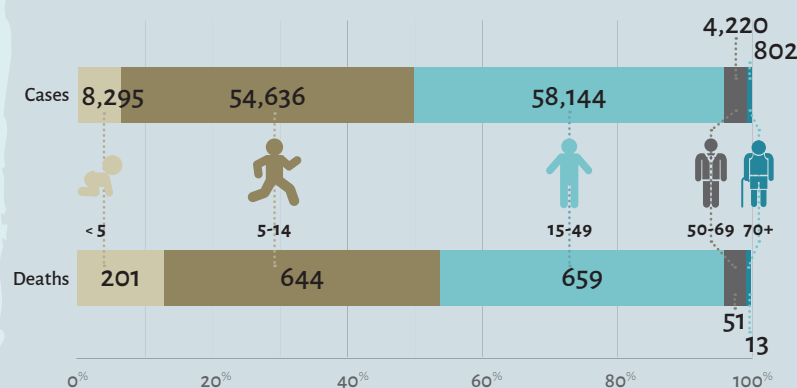


Drug-resistant typhoid is more difficult to treat and **forces the use of more expensive and less readily-available** treatment options.

Half of the typhoid cases and more than half of typhoid deaths in Kenya occur in children **younger than 15 years old.**

Photo: PATH Mike Wang

TYPHOID CASES AND DEATHS IN KENYA BY AGE (2019)¹



Potential for typhoid conjugate vaccines (TCVs) in Kenya

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. Gavi, the Vaccine Alliance support for introduction 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 and yellow fever 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 Kenya.⁹

Let's Take on Typhoid in Kenya

- ✓ Typhoid is endemic in Kenya, with more than **126,000** cases per year.
- ✓ Kenya's **limited WASH infrastructure** heightens the risk of typhoid infections, particularly for young children.
- ✓ Half of Kenya's typhoid burden is borne by children **younger than 15** years of age.
- ✓ Data show an increase in **drug-resistant typhoid** in Kenya, 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**.

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