Malawi

Typhoid cases and deaths in Kenya by age (2019)

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

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.

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. 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.

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

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 typhoid

Typhoid cases and deaths in Kenya by age (2019)

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.

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.

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.

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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.\(^9\)

| ✔ 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. |