More than half of the typhoid cases and 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.\(^4\)

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.

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 2017, there were at least:

- 101,400 typhoid cases (210 cases per 100,000)
- 1,205 typhoid deaths
- 88,981 disability-adjusted life-years (DALYs), a measure of healthy years of life lost to either illness or early death, lost to typhoid\(^1\)

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.

Typhoid incidence per 100,000 – 2017\(^6\)

<table>
<thead>
<tr>
<th>Region</th>
<th>Typhoid Incidence</th>
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<tbody>
<tr>
<td>Kenya</td>
<td>50-100</td>
</tr>
<tr>
<td>Tanzania</td>
<td>101-300</td>
</tr>
<tr>
<td>Mozambique</td>
<td>&lt;5</td>
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<tr>
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Potential for typhoid conjugate vaccines in Kenya

Tybar-TCV® is a newly licensed and World Health Organization (WHO)-prequalified and recommended tool for typhoid prevention in endemic areas. Gavi, the Vaccine Alliance support for introduction is available now.

Tybar-TCV is highly effective and safe for children as young as 6 months of age, and:

- Only requires **one dose**;
- May be **more effective and longer-lasting** than other previous typhoid vaccines; and
- Can be **co-administered with measles-containing** vaccine.

A recent modeling analysis shows that in Kenya a catch-up campaign up to 15 years of age followed by routine immunization is the preferred strategy and likely cost effective with support from Gavi, the Vaccine Alliance.*

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*At a willingness to pay threshold of $100 or more to avert one disability-adjusted life-year.

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Typhoid is endemic in Kenya, with more than 101,000 cases per year.

Kenya’s limited WASH infrastructure heightens the risk of typhoid infections, particularly for young children.

More than 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 and globally.

**A new TCV** is 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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