Together We Can Take on Typhoid



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

TYPHOID CASES AND DEATHS IN KENYA BY AGE (2017)¹

Potential for typhoid conjugate vaccines in Kenya

Typbar-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.

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

Only requires **one dose**;

May be **more effective and longerlasting** 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.*7

*At a willingne<mark>ss to pay</mark> threshold of \$100 or more to avert <mark>one disabil</mark>ity-adjusted life-year

Let's Take on Typhoid in Kenya

- 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 costeffective, 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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- 3. World Bank. Water Supply and Sanitation in Kenya: Turning Finance into Services for 2015 and Beyond Water Supply and Sanitation in Kenya: Turning Finance into Services for 2015 and Beyond. 2011. Available at: https://www.wsp.org/sites/wsp/files/publications/CSO-Kenya.pdf.
- 4. Kariuki S, Rvathi G, Muyodi J, et al. Characterization of multidrug-resistant typhoid outbreaks in Kenya. Journal of Clinical Microbiology. 2004;42(4):1477-1482.
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- 6. Jin C, Gibani MM, Moore M, et al. Efficacy and immunogenicity of a Vi-tetanus toxoid conjugate vaccine in the prevention of typhoid fever using a controlled human infection model of *Salmonella* Typhi: A randomized control, phase 2b trial. *The Lancet*. 2017;390(10111):2472-2486.
- 7. Blicke J, Antillon M, Pieters Z, et al. Cost-effectiveness of routine and campaign use of typhoid Vi-conjugate vaccine in Gavi-eligible countries: A modelling study. The Lancet Infectious Diseases. 2019;19(7):P728-739.

Typhoid Vaccine Acceleration Consortium

