

# Burden of Typhoid in Zambia

Zambia is a typhoid-endemic country. The Global Burden of Disease study estimated that, in 2016, there were at least:

- 21,769** typhoid cases (131 cases per 100,000)
- 353** typhoid deaths
- 26,041** disability-adjusted **life-years lost** to typhoid<sup>1</sup>

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.

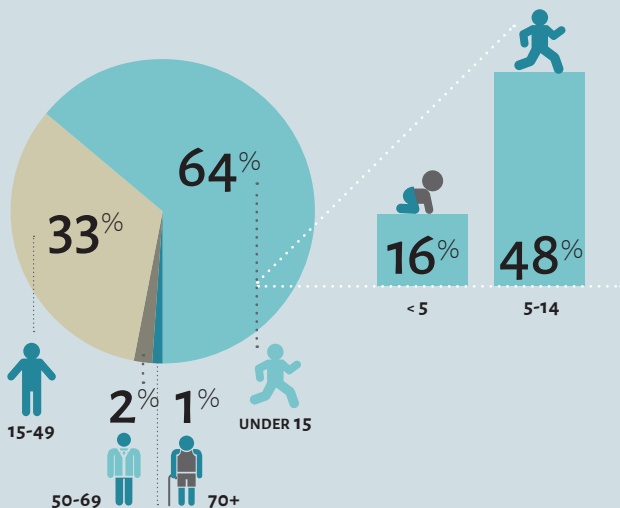


Most typhoid cases in Zambia occur in children **younger than 15 years old.**



Photo: PATH/Gabe Bienczycki

**TYPHOID CASES IN ZAMBIA BY AGE (2016)**



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



Global data show that the multidrug-resistant (MDR) H58 typhoid strain prevalence has **increased dramatically since 1992.**<sup>2</sup>



**An outbreak in Lusaka from 2010-2012 sickened 2,040 people**, of which nearly 90% were children under 15 years old. Analysis of samples from the outbreak showed it was caused by a variant of the H58 typhoid strain.<sup>3</sup>



More than 80% of the isolates analyzed showed high levels of resistance to **5 of the core antimicrobials available** to treat typhoid. A few of the isolates also showed low-level resistance to ciprofloxacin, a common treatment for typhoid.<sup>3</sup>



As drug-resistant typhoid becomes more common, it will become more difficult to treat and **force the use of more expensive and less readily-available** treatment options.

# Typhoid conjugate vaccines in Zambia

**Typbar-TCV<sup>®</sup>** 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,<sup>4</sup> and:



Only requires **one dose**;



May be **more effective and longer-lasting** than other previous typhoid vaccines; and



Can be **co-administered with measles** vaccine.

Preliminary findings from an economic analysis predict that, even in the absence of a Gavi subsidy, a catch-up campaign with TCV could be potentially cost-effective in Zambia.<sup>5</sup>



## Let's Take on Typhoid in Zambia

- ✓ Typhoid is endemic in Zambia, with more than **21,000** cases per year.
- ✓ Zambia's burden of typhoid is most heavily borne by children **under 15** years of age.
- ✓ Data show a global increase in **drug-resistant typhoid**, which could cause outbreaks in Zambia.
- ✓ **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**.

1. Institute for Health Metrics and Evaluation. Global Burden of Disease. 2017. Accessed via: [ghdx.healthdata.org/gbd-results-tool](http://ghdx.healthdata.org/gbd-results-tool).
2. Wong VK, Baker S, Pickard DJ, et al. Phylogeographical analysis of the dominant multidrug-resistant H58 clade of *Salmonella* Typhi identifies inter- and intracontinental transmission events. *Nature Genetics*. 2015;47(6):632-639.
3. Hendriksen RS, Leekitcharoenphon P, Lukjancenko O, et al. Genomic signature of multidrug-resistant *Salmonella enterica* serovar Typhi isolates related to a massive outbreak in Zambia between 2010 and 2012. *Journal of Clinical Microbiology*. 2015;53:262-272.
4. 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):2472-2480.
5. Bilcke J, et al. Setting global performance standards for a cost-effective typhoid conjugate vaccine strategy; modelling study. In prep.