

# Burden of Typhoid in Uganda

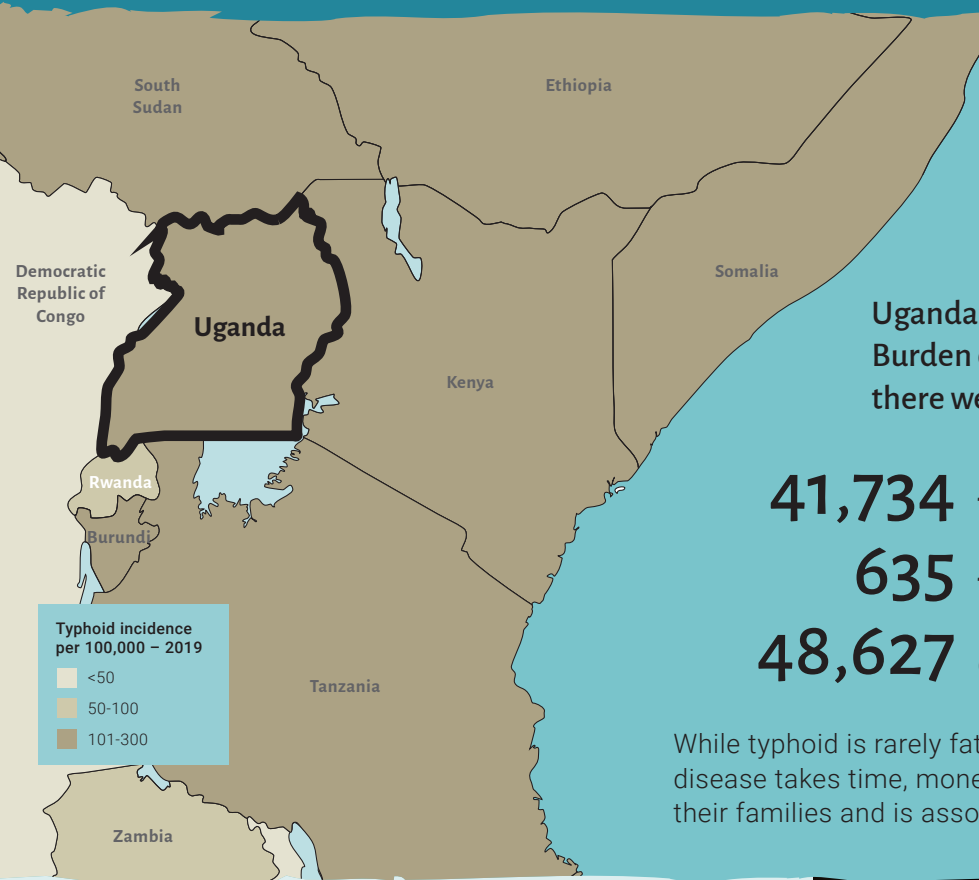
Uganda is a typhoid-endemic country. The Global Burden of Disease study estimated that, in 2019, there were at least:

**41,734** typhoid cases (102 cases per 100,000)

**635** typhoid deaths

**48,627** 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.

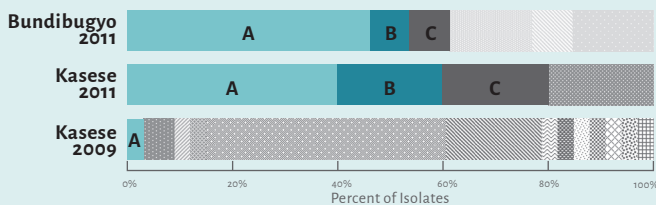


**Drug-resistant typhoid strains** are a growing problem in Uganda, regionally, and across the globe.



During an outbreak in Bundibugyo and Kasese Districts from 2008 to 2011, multidrug-resistant strains increased from just 5% of isolates in 2009 to 83% of isolates in 2011.<sup>2</sup>

**A B C Drug Resistant Strains**

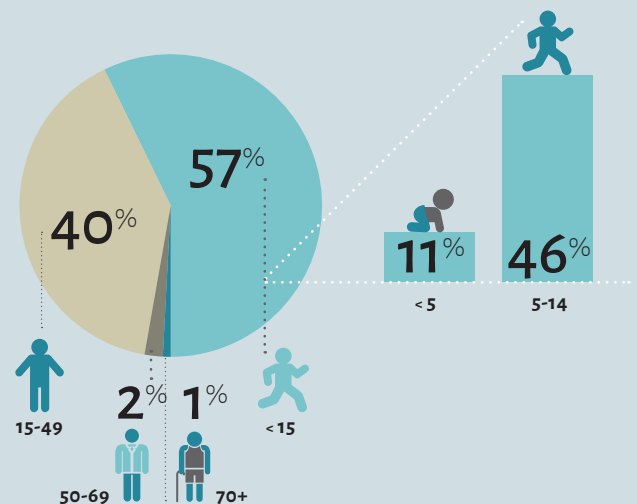


During the 2015 outbreak in Kampala, which caused over 10,000 suspected cases, one analysis found that 22.7% of isolates had multidrug resistance genes, and all showed reduced susceptibility to ciprofloxacin.<sup>3</sup>

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.

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

**TYPHOID CASES IN UGANDA BY AGE (2019)**



# Typhoid conjugate vaccines (TCVs) in Uganda

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**. TCVs:



Are highly effective and safe for children as young as **6 months** of age;



Require a **single dose** to prevent 79-85% of typhoid cases in children;



Offer strong protection for **at least 4 years**; and



Can be **co-administered with measles-rubella and meningococcal A** vaccines.<sup>5</sup>

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 Uganda.<sup>6</sup>



## Let's Take on Typhoid in Uganda

- ✓ Typhoid is endemic in Uganda, with more than **41,000** cases per year.
- ✓ Uganda's burden of typhoid is most heavily borne by children **under 15** years of age.
- ✓ Data show an increase in **drug-resistant typhoid** in Uganda, 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**.

1. Institute for Health Metrics and Evaluation. Global Burden of Disease. 2019. Accessed via: [ghdx.healthdata.org/gbd-results-tool](https://ghdx.healthdata.org/gbd-results-tool).
2. Walters MS, Routh J, Mikoleit M, et al. Shifts in geographic distribution and antimicrobial resistance during a prolonged typhoid fever outbreak – Bundibugyo and Kasese Districts, Uganda, 2009-2011. *PLOS Neglected Tropical Diseases*. 2014;8(3):e2726.
3. Nsimire J, Buule J, Hughes P, et al. Antimicrobial susceptibility and resistance patterns of *Salmonella* Typhi during the 2015 typhoid outbreak in Kampala Uganda. Presented at: 10th International Conference on Typhoid and Other Invasive Salmonellosis 2017.
4. Patel PD, Patel P, Liang Y, et al. Safety and efficacy of a typhoid conjugate vaccine in Malawian children. *New England Journal of Medicine*. 2021;385(12):1104-1115.
5. Sirima SB, Ouedraogo A, Barry N, et al. Safety and immunogenicity of co-administration of meningococcal type A and measles-rubella vaccines with typhoid conjugate vaccine in children aged 15-23 months in Burkina Faso. *International Journal of Infectious Diseases*. 2021;102:517-526.
6. 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):728-739.