Burden of Typhoid in

Myanmar

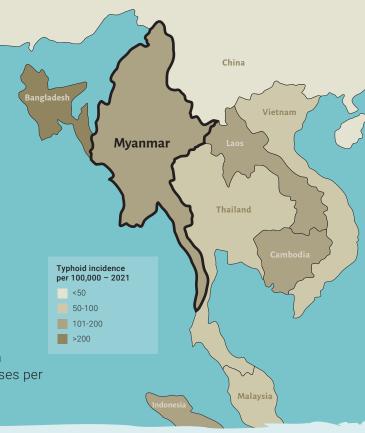
Myanmar is a typhoid-endemic country. The Global Burden of Disease study estimated that, in 2021, there were at least:

83,309 typhoid cases (148 cases per 100,000)

1,175 typhoid deaths

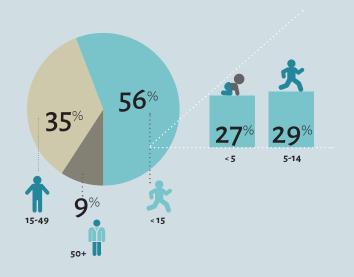
88,670 disability-adjusted **life-years lost** to typhoid¹

A separate study of blood culture-confirmed typhoid surveillance in Yangon hospitals estimated an annual typhoid incidence of 391 cases per 100,000 adolescents and adults in the Yangon area.²



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

TYPHOID CASES IN MYANMAR BY AGE (2021)



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 regionally and across the globe.



While limited data on drug-resistant typhoid infections in Myanmar are available, studies in Yangon have found a **high prevalence of resistance to first-line antibiotics** in other bacterial infections.³



Additionally, an abundance of studies have found an **alarming rate of drug resistant-typhoid both globally and in neighboring countries in Southeast Asia**.⁴ In a typhoid outbreak near the Thai/Myanmar border, 100% of cases were found to be multidrug-resistant.⁵



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

- Typhoid is endemic in Myanmar, with more than **83,000** cases per year.
- Most of Myanmar's typhoid burden is borne by children younger than 15 years of age.
- Data show an increase in drug-resistant typhoid globally, which could spread to Myanmar.
- TCVs are 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.

Typhoid conjugate vaccines (TCVs) in Myanmar

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;^{6,7}



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



Can be **co-administered with** measles-rubella vaccine.8

Findings from an economic analysis predict that, even in the absense of a Gavi subsidy, a catch-up campaign with TCV could be cost-effective in Myanmar.9



- 1. Institute for Health Metrics and Evaluation. Global Burden of Disease. 2021. Accessed via: ghdx.healthdata.org/gbd-results-tool.
- 2. Oo WT, Myat TO, Htike WW, et al. Incidence of typhoid and paratyphoid fevers among adolescents and adults in Yangon, Myanmar. Clinical Infectious Diseases. 2019;68(2):S124-S129.
- 3. Myan TO, Prasad N, Thinn KK, et al. Bloodstream infections at a tertiary referral hospital in Yangon, Myanmar. Tropical Medicine & Hygiene. 2014;108(11):692-698.
- 4. Britto CD, Wong VK, Dougan G, Pollard A). A systematic review of antimicrobial resistance in Salmonella enterica serovar Typhi, the etiological agent of typhoid. PLoS Neglected Tropical Diseases. 2018;12(10):e006779.
- 5. Swaddiwudhipong W and Kanlayanaphotporn J. A common-source water-borne outbreak of multi-drug-resistant typhoid fever in a rural Thai community. Journal of the Medical Association of Thailand. 2001;84:1513-1517.
- 6. Shakya M, Voysey M, Theiss-Nyland K, et al. Efficacy of typhoid conjugate vaccine in Nepal: Final results of a phase 3, randomised, controlled trial. The Lancet Global Health. 2021;9(11):e1561-1567.
- 7. Qadri F, Khanam F, Liu X, et al. Protection by vaccination of children against typhoid fever with a Vi-tetanus toxoid conjugate vaccine in urban Bangladesh: A cluster-randomised trial. The Lancet. 2021;398(10301):675-684.
- 8. Sirima SB, Ouedraogo A, Barry N, et al. Safety and immunogenicity of Vi-typhoid conjugate vaccine co-administration with routine 9-month vaccination in Burkina Faso: A randomized controlled phase 2 trial. International Journal of Infectious Diseases. 2021;108:465-472.
- 9. 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.



