Together We Can
Take on Typhoid

Burden of Typhoid in

Bangladesh

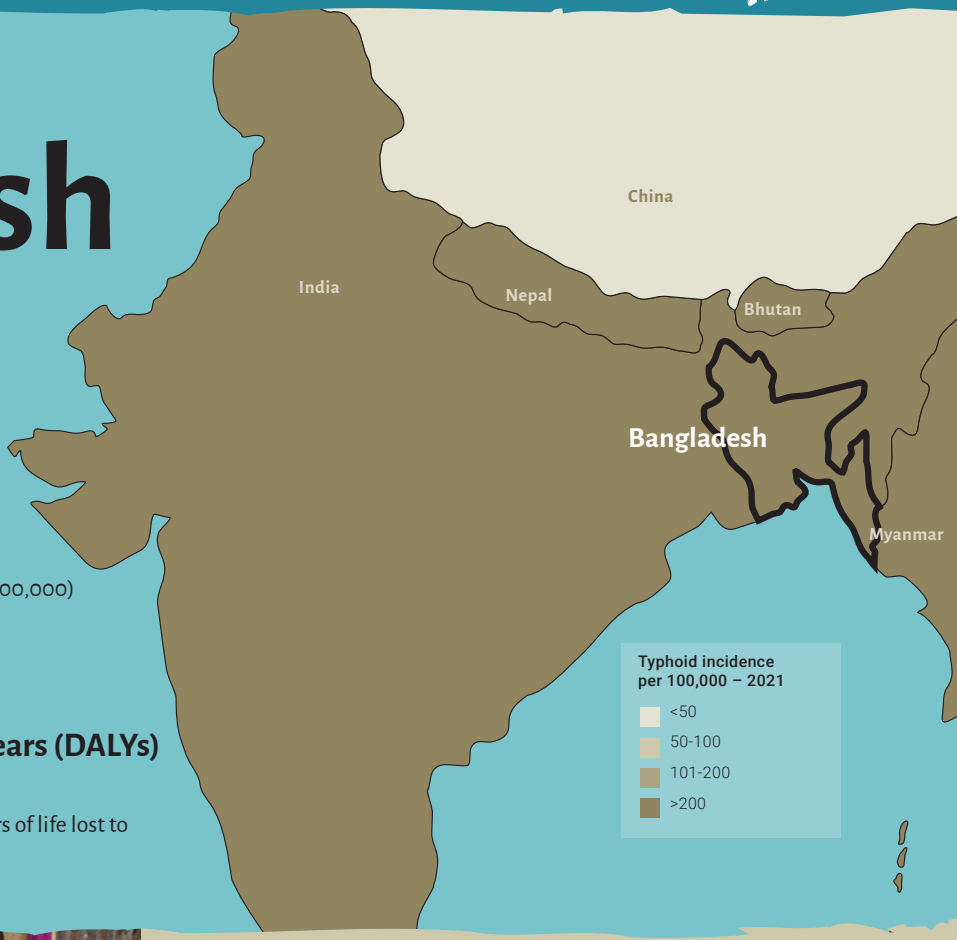
Bangladesh is a typhoid-endemic country. The Global Burden of Disease study estimated that, in 2021, there were at least:

477,518 **typhoid cases** (290 cases per 100,000)

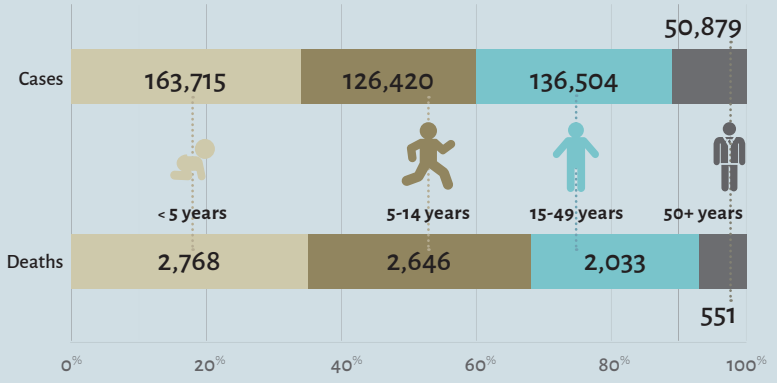
7,998 **typhoid deaths**

602,875 disability-adjusted **life-years (DALYs) lost** to typhoid[1]

DALYs are a measure of healthy years of life lost to either illness or early death



TYPHOID CASES AND DEATHS IN BANGLADESH BY AGE (2021)[1]



Typhoid is spread through contaminated food and water. In a recent study, 66 percent of tap water samples at study sites in Dhaka were positive for enteric fever,[2] demonstrating that water is a major source of typhoid infection in Bangladesh. Improvements to water and sanitation systems are important for long-term typhoid prevention and control, but can be costly and take time to implement. Typhoid conjugate vaccines can provide needed protection in the short-term.

Additionally, rapid urbanization has resulted in high population density in urban areas, which can raise the risk of typhoid transmission.[2]

High burden of typhoid among young children

Data on blood culture-confirmed typhoid cases in Dhaka, Bangladesh, found high rates of typhoid in children younger than 15 years old, with the highest rates in children 2-4 years old.[3]

Another surveillance study in Dhaka found 1,135 cases of typhoid per 100,000 people. The rate of typhoid cases identified from this study was highest in children 5-9 years old.[7]

The Surveillance for Enteric Fever in Asia Project (SEAP) found a high burden of typhoid among young children in Dhaka. Nearly 30 percent of blood culture confirmed typhoid cases are hospitalized, most of which are in children younger than 5 years of age.[4]

» This high rate of illness places a large economic burden on Bangladeshi families. A cost-of-illness study showed that typhoid typically costs a patient or caregiver US$64.69, 152% of Bangladesh's average annual health expenditure per capita. Inpatient cases are even more expensive, costing $US260.90.[5] TCV introduction is projected to substantially decrease typhoid cases and be cost-saving in Bangladesh.[6]

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.

Reflecting global and regional trends, drug-resistant typhoid strains are a growing problem in Bangladesh.

An analysis of typhoid isolates collected by SEAP found high levels of drug resistance. The proportion of isolates resistant to ciprofloxacin, a common antibiotic used to treat typhoid in the region, was nearly 100%.[3]

Another analysis examining drug-resistant typhoid trends in Bangladesh using isolates from 1999-2013 found high rates of drug resistance to four of the most commonly used antibiotics.[8]

Children who contracted MDR typhoid had a longer duration of illness despite treatment,[9] placing further economic burdens on their families for their care.

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

Typhoid conjugate vaccines (TCVs) in Bangladesh

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;[10]
- Offer strong protection for **at least 4 years**; and
- Can be **co-administered with measles-rubella** vaccine.[11]

A recent modeling analysis shows that in Bangladesh, a catch-up campaign up to 15 years of age followed by routine immunization is the **preferred strategy and likely cost-saving**.[6]

Let's Take on Typhoid in Bangladesh

- Typhoid is endemic in Bangladesh, with more than ***477,000*** cases per year.
- More than half of Bangladesh's typhoid burden is borne by children ***younger than 15*** years of age.
- Data show an increase in ***drug-resistant typhoid*** in Bangladesh, 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.
- The Government of Bangladesh has made the decision to ***introduce TCV***.

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TyVAC Typhoid Vaccine Acceleration Consortium
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