Together We Can
Take on Typhoid

Typhoid: A preventable global health threat

Typhoid, a serious and sometimes fatal enteric fever spread through contaminated food and water, is a substantial public health issue that disproportionately impacts children and low-income populations in Asia and sub-Saharan Africa.

SYMPTOMS

Typhoid causes fever, fatigue, headache, abdominal pain, and diarrhea or constipation. With symptoms common to many infections, typhoid may often be mistaken for other diseases such as malaria, pneumonia, dengue, or influenza. If left untreated, typhoid can cause a variety of short- and long-term complications.

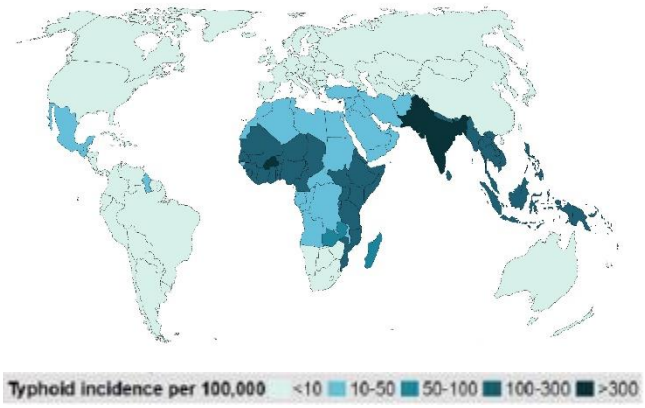
TRANSMISSION

Caused by a bacteria called *Salmonella enterica* serovar Typhi, typhoid is spread by the fecal-oral route through contaminated food and water and poor sanitation. It can be transmitted in an epidemic (i.e., sudden outbreaks) or endemic (i.e., regularly found within a population) fashion.

GLOBAL BURDEN

Although typhoid has been largely eliminated in industrialized countries, it continues to be a substantial public health problem in many low- and middle-income countries. The Global Burden of Disease (GBD) study estimates that in 2019, there were more than 9 million cases and more than 110,000 deaths due to typhoid worldwide. However, the burden is likely underestimated due to difficulties with surveillance and diagnostics.

Children and adolescents in Asia and sub-Saharan Africa are disproportionately impacted by typhoid, with those living in poor communities at greatest risk. GBD estimates that 75 percent of typhoid deaths occur in Asia, though recent data from sub-Saharan Africa suggest that the typhoid burden in the region is likely greater than previously known. Additionally, current trends of drug resistance, urbanization, and climate change may increase the risk for typhoid worldwide.



In 2019, typhoid caused more than 9 million cases and more than 110,000 deaths worldwide, mostly in Asia and sub-Saharan Africa.

TREATMENT

Appropriate antibiotics are the only effective way to treat typhoid. The traditional first-line antibiotics for treatment of typhoid are chloramphenicol, ampicillin, and cotrimoxazole. However, resistance has been seen with these antibiotics since the 1970s, and evidence shows that drug resistance is spreading. Starting in late 2016, the first-ever outbreak of extensively drug-resistant typhoid, resistant to almost all known antibiotics against the disease, was discovered in Pakistan.

Depending on severity of disease and presence of complications, additional treatment measures such as intravenous hydration, blood transfusions, or surgery may be required. The risk of complications underscores the importance of prompt treatment following diagnosis, as well as the need to prioritize prevention.

PREVENTION

Improved water quality, sanitation, and hygiene are the major ways to break the typhoid transmission cycle in the long term. However, until these investments can be made in all countries, vaccination is an important and effective way to prevent typhoid.

Four typhoid vaccines are globally available: two typhoid conjugate vaccines (TCVs); an oral, live attenuated Ty21a vaccine; and an injectable Vi capsular polysaccharide (ViCPS) vaccine.

The World Health Organization (WHO)-prequalified TCVs are safe, provide strong protection after a single dose, and are suitable for children 6 months of age and older, allowing for delivery through routine childhood immunization programs. Interim results from a Phase 3 study in Nepal found Typbar TCV®, one of the prequalified TCVs, to be safe and efficacious in an endemic setting, preventing more than 81 percent of typhoid cases in vaccinated children.

Expanded use of TCVs through routine immunization has the potential to reduce the need for antibiotics, slow further emergence of drug-resistant typhoid strains, and save lives.

Uptake of the older typhoid vaccines—Ty21a and ViCPS—in typhoid-endemic countries has been low. The Ty21a vaccine requires numerous doses, and the ViCPS vaccine has short-lived protection, requiring a booster dose every two to three years. Additionally, neither vaccine is approved for use in children younger than two years of age, which prevents their inclusion in routine childhood vaccination programs. Gavi, the Vaccine Alliance does not provide funding for either of these vaccines.

WHO RECOMMENDATION

In March 2018, WHO recommended that typhoid-endemic countries introduce prequalified TCVs into routine immunization programs as a single dose for infants and children over 6 months of age, accompanied by catch-up vaccination campaigns for children up to 15 years of age, where feasible. Additionally, WHO recommended prioritizing countries with a high burden of disease and/or a growing burden of drug-resistant typhoid, and in response to confirmed typhoid outbreaks.

Sabin Vaccine Institute

Four-year-old Golden Kondowe was the first child in Africa to receive a vaccine as part of a Typhoid Vaccine Acceleration Consortium effectiveness study in Malawi, February 2018.

GAVI SUPPORT FOR TCVs

Gavi has earmarked US$85 million to support the introduction of TCVs into routine immunization programs of eligible countries and is accepting applications for financial support. Pakistan became the first country to introduce TCV into their routine immunization program in 2019; Liberia and Zimbabwe introduced TCV in 2021. Additional countries are in various stages of the decision-making process as well.

Learn more and join the effort at www.takeontyphoid.org.

#TakeOnTyphoid