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.

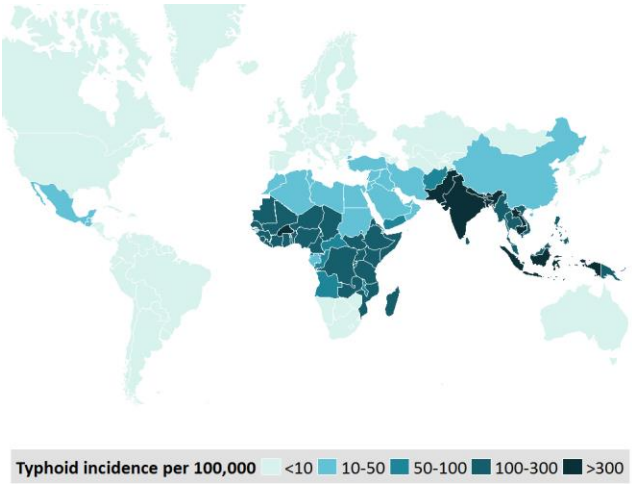
TRANSMISSION

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 2016, there were nearly 12 million cases and more than 128,000 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 more than 80 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 2016, typhoid caused nearly 12 million cases and 128,000 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, Pakistan experienced the first-ever outbreak of extensively drug-resistant typhoid, resistant to almost all known antibiotics against the disease.

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.

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

Ty21a is approved for use in children six years of age and older and requires three to four doses, and the ViCPS vaccine is licensed for children two years of age and older with a booster dose required every two to three years. Studies show these two vaccines to be safe and to protect 50 to 80 percent of recipients. However, because neither vaccine gives lasting immunity or is approved for use in children younger than two years of age, they have limited potential health benefits. Neither vaccine is widely used in routine immunization programs or subsidized by Gavi, the Vaccine Alliance.

Compared to the Ty21a and ViCPS vaccines, a newly available TCV provides stronger and longer-lasting protection, requires fewer doses, and is suitable for children 6 months of age and older, allowing for delivery through routine childhood immunization programs.

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.

WHO RECOMMENDATION

In March 2018, the World Health Organization (WHO) recommended that typhoid-endemic countries introduce prequalified TCVs into routine childhood 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 the 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 and is accepting applications for financial support, with introductions anticipated in 2019 and 2020.

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

#TakeOnTyphoid