

DRUG-RESISTANT TB

New innovations can overcome the world's deadliest “superbug”

Tuberculosis (TB) is one of the leading infectious causes of death worldwide, and the problem is worsening, with approximately 500,000 new cases of drug-resistant forms of TB (DR-TB) each year.

DR-TB has been deadlier and much more complicated to treat than drug-susceptible TB (DS-TB) and the threat of “superbugs” is increasing around the world. Now, with advances in treatment led by TB Alliance, almost all patients with DR-TB can now be treated in the same amount of time and with comparable efficacy as those with DS-TB.

Historic Barriers to Treating DR-TB

Prior to 2019, there were no approved treatments for the deadliest and most drug-resistant forms of TB. Traditionally, treatment for DR-TB took up two years or longer and included as many as 14,000 pills. Therapy was so complex, expensive, and toxic that many patients were unable to access or complete treatment. These treatments could cost literally thousands of times compared to that of DS-TB treatment in some regions — posing a significant challenge to governments, health systems, and other payers. Despite such significant cost and burden to patients and care providers, nearly half of those who were able to access therapy still went uncured.



A researcher holds up one week of a new treatment regimen during TB Alliance's Nix-TB clinical trial

Photo: John-Michael Maas

New Tools to Combat DR-TB

In 2019, TB Alliance received **approval from the U.S. Food and Drug Administration (FDA)** for its anti-TB drug in a **combination regimen** for the treatment of people with highly drug-resistant forms of TB. It has since been approved by 18 regulatory agencies, prequalified by the World Health Organization (WHO) and will be included in WHO's DR-TB guidelines allowing for its use in the programmatic treatment of almost all forms of DR-TB.

This all-oral, three-drug regimen has demonstrated a favorable outcome rate of 90 percent in people with highly drug-resistant forms of TB—similar success rates and the same duration of therapy as DS-TB.

New advances in DR-TB treatment enable similar **success rates** and the **same treatment time** as DS-TB.



One day of new regimen vs. one day of traditional treatment for highly drug-resistant TB.

Photo: Michele Spatari-AFP

TB and Antimicrobial Resistance

Antimicrobial resistance (AMR) is a defining health issue of our time. So-called “superbugs” pose a staggering threat to public health, safety and the global economy. While AMR is often associated with hospital-based infections, like MRSA (methicillin-resistant *Staphylococcus aureus*), drug-resistant TB accounts for about 29% of deaths caused by antimicrobial infections—more than any other drug-resistant infection. The introduction and scale-up of improved DR-TB therapies represent a tremendous opportunity to make progress in the fight against AMR more broadly.

29% DEATHS

from antimicrobial infections are due to drug-resistant TB—more than any other drug-resistant infection

59%

treatment success rate for people with DR-TB with traditional therapies

14,000+

pills to cure a single case of DR-TB prior to TB Alliance’s new treatment regimen

90%

treatment success rate with TB Alliance’s new regimen

Short, simple, and effective **cures for DR-TB** are critical to overcoming AMR

Fending Off Drug Resistance with Shorter, Better Cures

Drug-resistant TB can develop when a treatment course of first-line antibiotics is not completed, which happens for many different reasons. Given the length and complexity of treatment for drug-susceptible TB (up to four drugs daily over six to nine months) and issues relating to accessing this treatment, the development of drug resistance can be difficult to contain. Once drug-resistant TB has developed, it can spread directly from person to person through the air. New and improved therapies are urgently needed. If used appropriately, shorter, simpler and more powerful cures have the potential to overcome TB drug resistance and make progress against the TB pandemic.