

# REMOxTB: Blazing a trail for future trials

Shorter and simpler TB cures are urgently needed. REMoxTB was a Phase 3 clinical trial that tested whether substituting moxifloxacin for one of the existing first-line TB drugs (isoniazid or ethambutol) could shorten treatment for drug-sensitive tuberculosis (TB) from six to four months. It was the first registration-grade Phase 3 drug-sensitive TB trial conducted in decades and among the largest ever conducted for a new TB treatment.

REMOxTB—a trial conducted in collaboration by TB Alliance, Bayer HealthCare AG, the University College London (UCL) Centre for Clinical Microbiology, the Medical Research Council Clinical Trials Unit at UCL and the University of St. Andrews—laid the groundwork for future research and yielded important scientific findings that help guide current and future TB research.

## Establish and scale clinical capacity

REMOxTB was instrumental in developing much of the infrastructure and clinical capacity needed for conducting advanced TB research in high TB burden countries. The trial was conducted according to the highest regulatory and clinical standards, enrolling 1,931 patients in nine countries across 50 sites, mainly in Africa and Asia (Kenya, Mexico, Tanzania, South Africa, China, India, Thailand, Malaysia

and Zambia). Before REMoxTB, there was little human and other infrastructure to carry out TB research. As part of the REMoxTB trial, sites in high TB burden countries were identified, personnel were trained, and the facilities were outfitted to conduct the phase 3 TB drug trial. That has had a lasting impact. South African sites, for example, that were part of this early effort now represent the epicenter of cutting-edge TB research, with the capacity to play a central role in finding new TB cures.

## Enable shorter, faster, and cheaper trials

The groundwork laid by conducting REMoxTB will help save time and money in future TB trials. Through the trial, the REMoxTB consortium has established protocols, methodologies, networks of researchers, and efficiencies to streamline TB research. Importantly, the learnings from REMox has led to regulators reconsidering trial designs, helping to lower the hurdles and expense for proving the value of new regimens.

Scientifically, REMoxTB may yield breakthroughs that will transform trials in other ways. One of the contributing factors to the length of phase 3 TB clinical trials is the need to follow patients for a long time after they complete treatment to confirm the disease has been cured, and patients are free

## Sites participating in REMox

**REMOxTB was a Phase 3 clinical trial conducted at 50 sites in 9 countries, and was among the largest trials ever conducted for a new TB treatment.**



from relapses. Discovering a biomarker to predict long-term outcomes could substantially accelerate the pace of TB drug research. REMoxTB provided the platform through which to launch a “biobank” that could store the materials needed to search for such a biomarker. The CDC TB Trials Consortium (TBTC) and the AIDS Clinical Trial Group (ACTG) of the US NIAID, NIH, also contribute data on an ongoing basis.

## Integrate communities into the research process

Without community, research is not possible. REMoxTB brought community engagement (CE), a formal mechanism to educate communities and solicit input and feedback to the trial, to scale and established it as part of a best practice for TB R&D. This effort contributed to increased knowledge among patients and communities and also helped the communities in which the studies were done better understand the value of clinical trials for new TB treatments. The commitment to CE has continued to grow in both size and scope; CE programs are now seen as best-practice in TB research and accompany all TB Alliance late-stage clinical trials, as well as other sponsor’s efforts.

### On Community Engagement:

**“We are partners with the researchers. We take the concerns of the community to the researchers, we address the myths and misconceptions about research to the community so that they understand what research means.”**

**Susan Moloto**  
Community Stakeholder, Soweto

## Define the pathways to patients

REMoxTB helped catalyze researchers, regulators, manufacturers, donors, and other stakeholders to work together and advance new TB cures. As part of that, social science and market research was conducted around REMoxTB that defined the path toward regimen change and uptake in high TB burden countries. Studies were undertaken that quantified the cost to patients of accessing treatment, estimated the global market for TB treatment, uncovered the role of the private sector in TB treatment, and the value of a shorter treatment to patients and payers. This research has helped to increase the world’s understanding of what products are needed, what governs their uptake, and how they are likely to be used. Such understanding is critical for all new TB treatment products.

## Findings pave the way for future trials

The results of REMoxTB showed that experimental regimens, which substituted moxifloxacin for two drugs in the first-line regimen, could kill TB bacteria—but not enough to shorten the treatment time by two months. The trial was also the first study to confirm the safety of daily moxifloxacin over four months of therapy. Moxifloxacin’s safety and activity against TB in the REMoxTB trial support its continued clinical testing as a component of other, novel regimens that could make a life-saving difference for the millions of patients newly diagnosed with TB each year. Some of this research is already underway.

