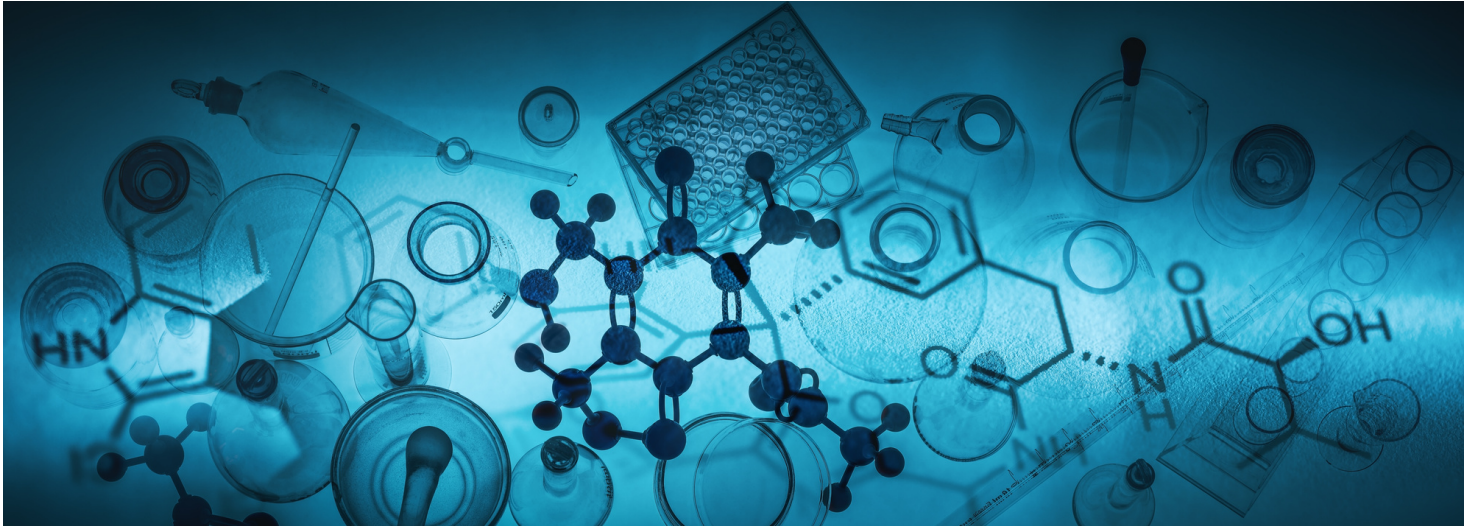


THE MONTHLY DOSE

Official Newsletter of The Mueller Health Foundation



WHAT'S NEW AT THE MUELLER HEALTH FOUNDATION:

As we welcome a new year, we at The Mueller Health Foundation extend our warmest wishes to our partners, colleagues, and the global TB community for a healthy and hopeful start to 2026.

This moment of renewal is also an opportunity for us to reaffirm our commitment to advancing the fight against tuberculosis and to continuing to work side by side with our partners, while always centering the voices and needs of people affected by TB in everything we do.

We remain inspired by the collective dedication of researchers, advocates, clinicians, and community leaders who continue to push this work forward. As we look ahead, we are excited for both ongoing and new collaborations that will strengthen our shared impact.

Stay tuned for more updates in the months ahead. We look forward to another year of progress together!

LATEST NEWS: SHOWCASING STORIES OF TB SURVIVORS

We at The Mueller Health Foundation remain deeply committed to sharing personal stories and giving a voice to TB patients, TB survivors, TB practitioners, and the friends and family of those affected by the disease. We are also proud to continue supporting Tamasha, our HeroRat trained by APOPO to detect tuberculosis in sputum samples across Africa. APOPO has put together a wonderful collection of success stories from TB survivors, and this month, we would like to highlight Mohammed-Sali's story:

Mohammed-Sali, a 30-year-old father of two from Ashewa Meda in Burayu, just outside Addis Ababa in Ethiopia, was diagnosed with tuberculosis for the second time after recognizing the familiar symptoms he had experienced eight years earlier. Having battled TB once before, he did not delay seeking care when his cough, night sweats, and loss of appetite returned. Concerned most for the safety of his wife and young daughters, he isolated himself at home until his coughing subsided and ensured that his family was tested. He was relieved to learn that none of them had contracted the disease. This time, his clinic emphasized the importance of strict treatment adherence, and Mohammed-Sali followed every instruction carefully, beginning to regain his strength after several months of medication. What surprised him most was later learning that his diagnosis had been made possible through APOPO's innovative method using trained rats to detect TB in sputum samples. Initially astonished, he soon felt deep gratitude for the staff and the animals whose work helped save his life. During his illness, Mohammed-Sali was unable to work and relied on the support of friends and family, but he has since returned to running his small business selling building and household materials. Today, he remains hopeful for the future of his daughters and urges anyone experiencing symptoms to seek testing as early diagnosis, he believes, is the key to survival and recovery. To read his full story, please follow the link here: <https://apopo.org/ethiopia-mohammed-sali/?v=0b3b97fa6688>

For more news, please also take a look at our top 3 picks for **January** in this newsletter, where we highlight novel research findings and news about the prevention and treatment of tuberculosis around the world.

MHF TOP PICKS FOR JANUARY

Every month, we at the Mueller Health Foundation like to showcase interesting news and updates in the field of tuberculosis (TB). Below are our top 3 picks for January:

1. New Clinical Standards Strengthen Antimicrobial Stewardship in Tuberculosis Care

New clinical standards have been published to strengthen antimicrobial stewardship specifically for tuberculosis care, addressing a long-standing gap in efforts to combat drug resistance in TB treatment. Developed by an international panel of 62 experts, these standards aim to integrate TB into existing antimicrobial stewardship programs, enhance surveillance and resistance monitoring, and improve timely access to comprehensive drug susceptibility testing. They also emphasize structured consultation services, targeted testing and preventive measures for high-risk groups, and systematic clinical and microbiological monitoring to ensure that TB treatment remains effective, safe, and resistant-preventive. The initiative reflects growing concern about antimicrobial resistance threatening progress in TB care and supports clinicians, program managers, and public health authorities in delivering responsible, sustainable TB treatment. To learn more, you can access the paper here: <https://www.ingentaconnect.com/content/iuatld/ijtdo/2025/00000002/0000012/art00004;jsessionid=fav2fjacm052.x-ic-live-01>

2. Innovative Lung-on-Chip Models Human Alveoli

Researchers have developed an advanced human lung-on-chip system called iLoC that better replicates the structure and function of human alveolar tissue than traditional cell cultures or animal models, opening new possibilities for studying respiratory infections like tuberculosis. The platform uses human induced pluripotent stem cells (iPSCs) to recreate a three-dimensional alveolar environment with key lung cell types, including epithelial cells, endothelial cells, and immune macrophages, under conditions that closely mimic human breathing and lung physiology. In experiments with *Mycobacterium tuberculosis*, the model revealed how alveolar macrophages and epithelial cells respond to early infection, offering novel insights into TB pathogenesis and the role of immune responses. Researchers also showed that the autophagy-related gene ATG14 influences macrophage survival and immune signaling during infection, highlighting the model's potential to explore host-pathogen interactions and test new therapies. To learn more, you can access the article here: <https://pmc.ncbi.nlm.nih.gov/articles/PMC12757024/>

3. New Two-Pronged Therapy Shows Promise in Defeating Drug-Resistant TB

Rockefeller University researchers have identified a promising dual-drug strategy that could more effectively combat drug-resistant tuberculosis by reinforcing, rather than replacing, existing therapy. The study, published in *Nature Microbiology*, shows that combining the frontline antibiotic rifampicin with a second compound called AAP-SO₂ can exploit a weakness in a common resistance mutation in the TB bacterium's transcription machinery. While rifampicin targets the early stage of bacterial RNA synthesis, AAP-SO₂ hits a later step in the same pathway, together producing a synergistic effect that suppresses resistance and kills dormant bacterial clusters that standard drugs often miss. In lab and animal models, the combination dramatically boosted rifampicin's potency and effectively eliminated resistant mutants, suggesting a new precision-medicine approach to TB treatment that could inform future dual-inhibitor therapies and better strategies to outmaneuver bacterial resistance. You can read the paper here: <https://www.nature.com/articles/s41564-025-02201-6>

DID YOU KNOW?

A compelling story from a tuberculosis shelter in Bangladesh offers a rare and meaningful look at both the challenges and the hope behind frontline TB care.

For more than two decades, Sister Agustina Tudu has served patients at a shelter in the Diocese of Rajshahi, where 400–500 people affected by TB, many from remote tribal and rural communities, receive care each month. Patients often arrive severely malnourished, stigmatized, and without stable housing or family support, making it difficult for them to complete treatment on their own. Some remain at the shelter for months or even more than a year, not only to finish their medication but also to regain strength through daily meals, safe lodging, and consistent emotional and social support.

The shelter absorbs much of the cost of care, including food, basic medical needs, and long-term accommodation, even as operational expenses continue to rise and financial resources remain limited.

Despite these challenges, the program stands as a powerful success story, demonstrating how compassionate, community-based support can enable patients to adhere to treatment, recover fully, and return to their families and livelihoods with renewed hope. Sister Agustina's reflection offers invaluable insight into the realities of working in a TB shelter in Bangladesh and shows the profound impact that dedication and dignity-centered care can have on the lives of those most affected by the disease.

To learn more, the full interview with Sister Agustina Tudu can be accessed here: <https://www.globalsistersreport.org/news/gas/ga-sr-agustina-tudu-serving-tuberculosis-patients-bangladesh>