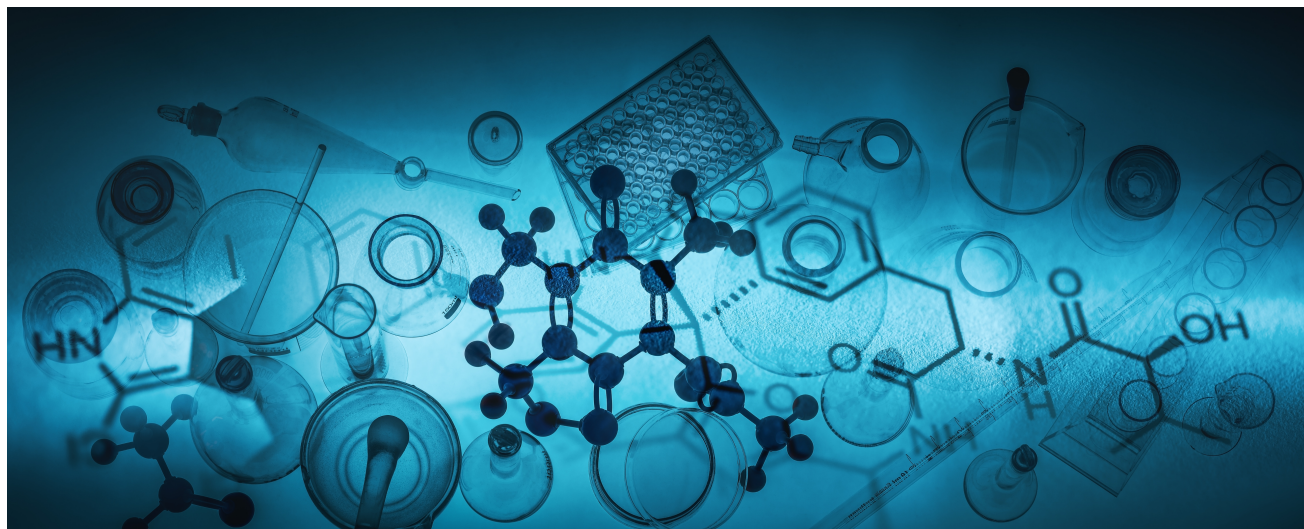


THE MONTHLY DOSE

Official Newsletter of The Mueller Health Foundation



WHAT'S NEW AT THE MUELLER HEALTH FOUNDATION:

We at The Mueller Health Foundation wish you a most wonderful holiday season and a happy and healthy start to the New Year 2022!

We are thankful for all of our supporters, partners, and collaborators for their great work this year and look forward to many more achievements in the year to come!

Stay tuned for more updates!

LATEST NEWS: LOOKING BACK AND LOOKING AHEAD

Our team at The Mueller Health Foundation would like to start by expressing our most heartfelt gratitude to the entire TB community as well as our partners and collaborators for the tremendous amount of work that has been completed over the past 12 months. We are so grateful for the commitment and resilience of all of those fighting to make a difference in TB and for showing unwavering perseverance even during the difficult times of the continuing global COVID-19 pandemic.

The COVID-19 pandemic has unfortunately had a very negative impact on TB funding, research, diagnostics, and treatment options and according to the WHO only 5.8 million people were diagnosed and treated with TB in 2020, down from 7.1 million in 2019. However, some tangible progress has been made in 2021 by deploying new digital X-ray units, using Artificial Intelligence (AI) in improving research, and implementing mobile diagnostics for TB. Nonetheless, despite these advancements, the overall progress towards eradicating TB has been set back by over a decade and it is now more important than ever to continue investing time and resources in finding novel preventative and treatment options, particularly for resistant strains of TB.

We hope that the new year will provide many opportunities to advocate for more funding and to make many more tools and improved treatment options available to all of those affected by TB. We thank the TB community for continuing to believe in this cause and encourage everyone to actively join the fight against TB around the globe in 2022!

MHF TOP PICKS FOR DECEMBER

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

1. Researchers Find Promising New Target for TB Treatment

Researchers at Weill Cornell Medicine, whose findings appeared Nov. 15 in Nature Communications, investigated the role of an Mtb enzyme that had never been studied in depth before, and discovered that it is crucial for Mtb's breakdown of available fatty acids to supply energy and molecular building blocks for growth and survival. Deleting just that one enzyme, which they called EtfDMtb, rendered Mtb unable to sustain an infection in mice. The researchers also plan additional studies to determine whether EtfDMtb or closely related enzymes could be good drug targets in other disease-causing bacteria. To learn more, you can access the full journal article at:

<https://www.sciencedaily.com/releases/2021/12/211221133141.htm>

2. Tracking the Spread of Tuberculosis in Brazilian Prisons

Over the past several years, Jason Andrews, MD, associate professor of infectious disease, has led a team to investigate the transmission of tuberculosis in Brazilian prisons. The study found that at the time of incarceration, the prevalence of tuberculosis infection is very similar to that of the general population. Less than 10% of people entering prisons have tuberculosis. But every year of incarceration is associated with a 25% to 40% increase in risk of infection, and by the time of their release, incarcerated people are 30 times more likely than those in surrounding communities to have tuberculosis. The increase is likely due to the crowding of up to 40 people per cell and the sharing of beds by as many as three people, the researchers said. Ventilation is also often inadequate, and most prisoners spend nearly all day inside. Poor nutrition and widespread alcohol and drug use exacerbate disease spread. Finally, prisoners are frequently moved from one location in the prison to another, bringing them into contact with new, large groups of people. To learn more, you can read the full article here:

<https://med.stanford.edu/news/all-news/2021/12/tuberculosis-brazil-prisons.html>

3. The Relationship among Social Support, Experienced Stigma, Psychological Distress, and Quality of Life among Tuberculosis Patients in China

This study empirically explored the interrelationships among social support, experienced stigma, psychological distress, and Quality of Life (QOL) and tested whether experienced stigma and psychological distress played a mediating role. The researchers found that (1) social support, experienced stigma and psychological distress affect the QOL of patients with TB; (2) experienced stigma mediates the relationship between social support and psychological distress; (3) psychological distress mediates the relationship between experienced stigma and QOL; and (4) experienced stigma and psychological distress are sequential mediators from social support to QOL. Understanding and managing the QOL of TB patients may lead to better outcomes, and the results of this study provide useful information to help TB patients achieve better QOL. To learn more, you can access the full paper here:

<https://www.nature.com/articles/s41598-021-03811-w>

DID YOU KNOW?

This month, we would like to highlight some interesting facts related to the funding shortfall in TB research during the COVID-19 pandemic.

- The total funding for TB research in 2020 was \$915 million, which is less than half of the UN goal of 2 billion. This amount has been stagnant since 2018.
- In 2020, TB research received less than 1% of the amount invested in COVID-19 research.
- COVID-19 and TB research funding have been treated disproportionately. While COVID-19 approximately killed 2 to 3 times as many people as TB, COVID-19 has received over 100 times more research funding.
- Of the total TB research and development amount, 36% was spent on drug development, 18% on basic science research, 14% on diagnostics, 13% on epidemiology, 13% on vaccines and 6% on infrastructure
- Globally, public sector funding accounted for 70% of overall research and development funds at \$641 million.
- Philanthropies were the second largest funding source across the globe, contributing \$134 million.
- Private companies and multilateral organizations contributed \$89 and \$49 million, respectively.
- The Mueller Health Foundation's committed funds to TB research comprise roughly 4% of the global commitments made by philanthropies in 2020.

Source:

<https://www.healio.com/news/infectious-disease/20211209/funding-for-tb-research-falls-well-short-of-un-target>