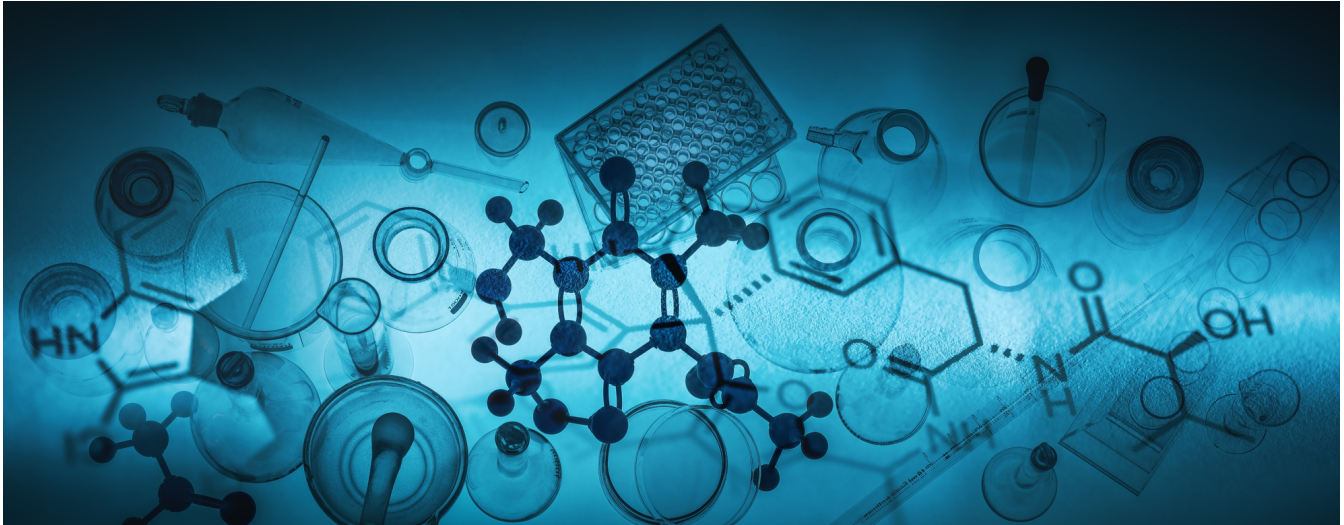


THE MONTHLY DOSE

Official Newsletter of The Mueller Health Foundation



WHAT'S NEW AT THE MUELLER HEALTH FOUNDATION:

In preparation for the UN High-Level Meeting on the Fight Against Tuberculosis in September 2023, the President of the UN General Assembly is convening a multi-stakeholder meeting to facilitate engagement across a variety of sectors.

We at The Mueller Health Foundation are proud to participate in the multi-stakeholder meeting at the UN Headquarters in the second week of May to help review global progress made in the fight against TB as well as to offer additional solutions to accelerate progress toward ending the epidemic.

Stay tuned for more updates!

LATEST NEWS: SHOWCASING STORIES OF TB SURVIVORS

We at The Mueller Health Foundation continue to be deeply committed to sharing personal stories and giving a voice to TB patients, TB survivors, TB practitioners, and all the friends and family members of the people who have been affected by the disease. The Center for Disease Control and Prevention (CDC) has put together a wonderful collection of stories and this month we would like to highlight Thomas' story. Here is an excerpt from his journey:

When Thomas started feeling sick his doctors diagnosed him with pneumonia. A couple of months later he was still having night sweats, did not have an appetite, and felt extremely tired all the time. At his next hospital visit he had a chest x-ray and was told he had TB. Thomas was told he had to take medication for nine months and was given a piece of paper with information about tuberculosis and treatment. But he felt so sick he did not fully read and understand the information he was given that explained the side effects from TB medications. Thomas was released from the hospital once he was no longer contagious. He had lost a lot of weight and was surprised when he looked at himself in the mirror and saw his thin body. However, he was soon able to get back to his normal activities and he began to build his weight back up to normal. However, the stigma around TB made some things difficult. He says: "I think the stigma that is out here is that, if a person knows you have it then they want to get away from you immediately. And I don't want to be shunned from all my family and friends. I don't want to be shunned from my job, you know, people looking at me odd because I got TB." He also has a message for those recently diagnosed with TB: "Stick with the medication. It's going to take you through some things but stick with it, because it's the only way that you're going to be able to get rid of it. That would be my advice, and to become aware and make others aware of the disease as much as you possibly can." To read his full story please follow the link to the Center for Disease Control and Prevention's website here: <https://www.cdc.gov/tb/topic/basics/thomasstory.htm>

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

MHF TOP PICKS FOR MAY

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 May:

1. Seven Transitions for Transforming Tuberculosis Diagnosis

Diagnosis is often considered the weakest aspect of tuberculosis care and control. In this newly published review, researchers describe seven critical transitions that could help to close the massive TB diagnostic gap and enable TB programs worldwide to recover from the pandemic setbacks. The seven transitions could help to diagnose more people thereby enabling TB treatment, which would in turn reduce spread of TB in the community. For example, a simple, non-sputum sample, combined with an affordable, multi-disease POC molecular technology, deployed in decentralized settings would reach a much larger population, close the case detection gap, and curb TB transmission at the population level. It is important to note, that these transitions are inter-linked, and the biggest impact will come from their integration. To learn more about the seven transitions, you can access the full paper at: <https://www.nature.com/articles/s41564-023-01365-3>

2. Researchers in Thailand Develop Rapid MTB Strip Test for Tuberculosis Detection

Researchers of the Faculty of Allied Health Sciences at Chulalongkorn University in Thailand have developed a new MTB Strip Test Kit for Tuberculosis diagnosis. The MTB Strip Test Kit consists of two main parts: 1. Genetic amplification using isothermal amplification with specifically modified and designed primers, and 2. Genetic materials detection using developed test strips, which are manufactured from ISO13485-certified industrial plants for medical device manufacturing. The key feature of the MTB Strip test is its sensitivity to tuberculosis. With a small amount of tuberculosis in the sputum, the test can detect it and display the result. In addition, the test process takes less than an hour and does not require any special tools. The MTB Strip Test prototypes have already been administered at Umphang Hospital. The researchers plan to expand the testing of TB and related diseases by developing an easier-to-use DNA extraction kit and TB test kit that can identify drug-resistant variants of TB right from the outset. To learn more, you can read the article here: <https://www.news-medical.net/news/20230428/Fighting-tuberculosis-with-the-new-MTB-Strip-Test-Kit.aspx>

3. Innovative Therapeutic Approaches Based on Nanotechnology for the Treatment and Management of Tuberculosis

Researchers have conducted an extensive review of the concept of employing nanoparticles (NPs) in TB therapy, which could offer impressive outcomes to conquer the disease. Controlling and maintaining the drug release might be an example of the benefits of utilizing a drug-loaded NP in TB therapy over conventional drug therapy. Furthermore, the drug-encapsulated NP is able to lessen dosage regimen and could resolve the problems of insufficient compliance. Overall, the use of pulmonary nano-drug delivery systems as a therapeutic agent for the treatment of TB has become extremely useful. Targeted drug delivery, enhanced drug solubility, decreased toxicity, reduced side effects compared to conventional drug regimens that cause MDR and XDR, and synergistic therapeutic effects are among the benefits of using nanomaterials to deliver drugs for the treatment of infectious lung diseases. Although nanomedicines have great potential, they are currently in the middle of their development. Research is still being done on concerns including physicochemical analysis, pharmacological activity, and pharmacodynamic applications. You can learn more and access the full paper here: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10008450/>

DID YOU KNOW?

The Inuit communities, who are comprised of indigenous people in the Northern parts of Canada, have historically experienced much higher TB rates than non-indigenous communities in Canada. Below are some interesting facts about TB and the Inuit people of Canada:

- While the overall rate of TB in Canada is low, some Inuit communities in the Arctic and in places such as northern Winnipeg have recorded some of the highest rates of TB in the world. In 2018, it was reported that Inuits suffer from TB at a rate close to 300 times higher than non-indigenous Canadians born in Canada, although the numbers have since fallen.
- The high rates of TB among the Inuit community in Canada are closely connected to poverty, inadequate and overcrowded housing, food insecurity and barriers to accessing health care, such as remoteness but also insufficient infrastructure.
- A genetic study published by McGill University in 2015 found that TB arrived in the Arctic around 1919 and that the Inuits had no prior contact with the disease prior to the establishment of trading posts.
- In the 1950s, TB was rampant in the Northern Arctic. It is estimated that about one in three of all Inuits were infected with the disease and one in seven were sent to sanatoriums in the Southern Arctic for treatment. Treatments often lasted for years. Families were torn apart, couples were separated and children were taken and placed into treatment facilities separate from their parents.
- In 2019, the Canadian government launched Nanilavut, Inuktitut for “Let’s find them,” an initiative to help Inuits repatriate the remains of their lost loved ones who perished during TB treatment.

Information Source:
<https://www.thestar.com/news/canada/2023/04/16/shame-separation-secrecy-neglect-the-painful-legacy-of-tuberculosis-in-canadas-north.html>