

As I sat here at this exact conference two years ago as an incoming EIS officer, I thought I knew I wanted to come to the CDC to work in global health. After hearing Eric Pevzner, EIS chief, talk about his own experience with TB, I thought everyone's going to want that TB position. As soon as I got to learn more about the global TB branch and met the supervisors, I realized I wanted that global TB position.

I was fortunate to match with the branch and this began my journey with TB, one that many had navigated before me, and many more will navigate after. As I officially became an EIS officer, I learned not only about tuberculosis or TB itself, but about TB as long history from the days of consumption and dead poets, to discoveries by Coke and Manto, to modern public health interventions from CDC leaders like Tom Frieden and Kayla Larsen.

There is a rich legacy in the TB world, people who have dedicated their entire careers to this cause. And little did I know that I, too, would become a part of this story. My story began with a simple question. You've been on a ship before, right? My branch chief asked me as I was pulled into a meeting with my supervisor, Bridget, and Dick Brostrom, better known as doctor B, the infamous CDC tv doc from Honolulu who is known for TB case finding work all over the US affiliated Pacific Islands.

Yes, I said, as a Floridian, I'd been on some boats, a ship for a long time. Maybe not. And at that time I had no idea that that yes would take me on a personal and professional journey of a lifetime. That, yes, took me on a journey halfway across the world to the Federated States of Micronesia, or FSM, a country with a population of about 100,000 people, spanning 607 islands and over 2000 miles.

This was an expedition to conduct community wide TB active case finding in the remote islands of FSM. This is not a *Notes from the Field*, but rather a "notes from the boat," and this story includes the commitment, resilience and grit of a team who is a part of this legacy of people dedicated to end TB, one that put me face to face with this world.

Most people still think of TB as an ancient disease, but over 10 million people were diagnosed with tuberculosis worldwide just last year, and over 10,000 here in the United States. You might have heard about the recent TB outbreak in Kansas. This bacteria spreads through the air from person to person and can infect any part of the body. But most commonly it affects the lungs.

TB can travel across the world, across borders to reach you, so TB and other parts of the world impacts directly. Our health here at home. In 2023, TB regained its place again as the number one infectious disease killer, causing 1.25 million deaths worldwide. To prevent this spread, active case finding has become recommended globally to find people who are living with TB.

This consists of going into high incidence communities with TB, skin tests and chest X-rays to identify people who should be started on TB treatment. The Division of TB elimination has been working on active case finding in the U.S. affiliated Pacific Islands.

Compared to the U.S., TB incidence is 17 times higher in FSM. TB active case finding was a major investment for the Cheuk state public Health program. This had already been conducted in the islands closer to the capital. The remaining campaign involved screening in the remote Mortlock and Hall Islands, which are 201 hundred miles away from the capital, Ueno. This is where I enter the picture.

This trip was extra special because our team was able to use a new technology for the first time to deal with this old disease. Since the early 1900s, skin tests have been used to check for TB infection. However, those older skin tests are not specific to the bacteria that causes TB. These new skin tests are administered similarly to the older tests, but they are more specific to TB.

This helps ensure that only people who have been infected with TB are diagnosed with it. For the first time outside of India, this new test was able to be used as a part of active case finding. Now that we had the new

technology, we needed people to use it. So a team of dedicated volunteers from around the US, TB nurses, epidemiologists and clinicians was assembled to join the local team from the state TB program.

We collected all of the supplies that we would need for our mission tables and fans for our clinics, a portable chest X-ray machine, a gene expert machine to test sputum, and the medication that we would be starting people on. We also needed supplies for ourselves since these remote islands did not have hotels restaurants. We. So we packed our sleeping bags and mats, food and water and a generator and the fuel needed to run it.

All of us, along with all of our supplies, were loaded into the North Star, our transportation for the next ten days. So how long does it take to travel 200 miles with the ship loaded down with 20 staff members, the ship's crew and all of our supplies. 21 hours. The journey initially started out fine while we were in the lagoon, but once we hit the open water, the rocking started.

So the ship started rocking this way and that way, and some of the local staff immediately went to the deck, where they lost their lunch over the side of the ship. Doctor Dorina Fried, the amazing local TB doctor, told us the secret to not getting seasick, to lie down horizontally so the rest of us retreated to our bunks or sleeping bags on the floor to try to ride out the journey without vomiting ourselves.

I was lucky, or at least initially, I thought I was as the only female physician on the trip besides Doctor Fred. I got her top bunk lol. Now let me clarify. And this was a basic accommodation, not your luxury cruise ship. I was in my sleeping bag on top of a wooden platform with a tinsel mat for padding for the majority of the trip.

This meant that as the ship swayed side to side, I had to not only try not to get sick but try not to fall off the side of the bed on top of a teammate who was laying on the floor below me and there was no railing to keep me up. After 21 hours of a tumultuous journey, we landed on Staten Island and immediately went to work.

Our schedule was tight and we were expected on the other islands on specific days, so we divided into teams and immediately began walking toward door to door across the island to get basic medical histories and place for skin tests.

On the island, initially, it seemed to be smooth sailing. Everyone seemed to know we were coming and were receptive to having the skin tests placed. I asked some of the local staff about this, and they told me that the local leadership had been informed ahead of time of our trip. The trust we needed from the community was built prior to our arrival.

This was essential to a successful campaign. Without our presence and without this, our presence and interventions would have been useless. We went from house to house, oftentimes entering living rooms and meeting entire families together. We worked late into the night using headlamps to place the tests. My job was to drop the test solution into the syringe, which was easy during the day.

But as we worked later into the night, became more challenging due to the minimal lighting from minimal electricity. This was after our long journey, still recovering from nausea and tired from a long day of work. The first few days I was in a t shirt and pants. Many of the local women kept asking me where my chunky skirt was.

After I was finally able to go to the market to buy one. I noticed that it seemed to fit in. More people were less guarded around me, more open. My yes not only landed me on a remote island in the middle of the Pacific, but also within such a beautiful group of people. After the skin tests were placed, they had to be read.

So on each island we set up mobile clinics and schools or churches. People were triaged depending on their skin test results and if needed, they had x rays and were started on treatment. This was June in Micronesia, where it can feel like almost 100°F due to the temperature and humidity. You are lucky if you had a fan.

Bringing this technology to the islands provided care to people who may never see a health care provider in their lives. Showing each participant their own chest x ray and as doctor B taught me, feeling the person's arm and explaining that they had sleeping TB or TB be mure in Chuukeses. I saw the glimmer of understanding in their eyes, even with my minimal Chuukese fluency.

This created the connection of understanding, leading to the desire for treatment. Not only were we able to start treatment onsite, we also trained community health workers. These individuals would be responsible for supporting patients through the treatment. Long after the screening teams had left the island. They would communicate with clinicians on Wado for any questions or concerns. This was one of the practicalities of living in remote settings.

The equivalent of telehealth using WhatsApp or phone calls for communication. Even after the clinics were done for the day, the work continued. We worked late into the night, entering data by the generator. We even prepared sputum samples by headlamps to be analyzed by gene expert machines in people's homes. We navigated the turbulence by making do with what we had, which meant not using gloves while preparing sputum and stool samples.

I even learned the hard way the term brownout, when there is a temporary decrease or pause in power due to the generator running out of gas. My stool samples that I had worked so diligently to make into a slurry, to run on the gene expert machine was lost to one of these. Not only was the journey itself amazing, but the science was also pretty cool compared to the old skin test.

This new skin tests showed 35% fewer people had positive results. This meant that fewer chest X-rays were required and over 100 fewer people were unnecessarily treated for TB infection, meaning that only those who needed to be on treatment actually received it. Throughout this trip, I was continually reminded of the of the community behind this active case fighting activity.

By the generosity of the people who housed and cooked for us, we slept in either the clinic on the floor and a community member's home using our sleeping mats, sharing one bathroom and shower for the entire team. Every night before we left each island, we were treated to a farewell feast consisting of local delicacies like roasted pig, coconut crab, breadfruit, and octopus, and sometimes even dancing.

Our 21-hour rocky ship ride back to Wano. As I continued to lie horizontally, I had plenty of time to reflect each and every person involved, including all of the volunteers, the local staff, the residents, and even myself. We are now a part of the legacy of the fight against TB. We joined the TB Warriors who came before us and will continue to come after us.

The vomit, sweat and tears of this effort will contribute to a new way forward for TV active case finding and will be a part of the story. This campaign, though, it was on the remote islands in the middle of the Pacific Ocean thousands of miles away, may seem like a pun intended drop in the ocean. But initiatives like this, like so many other public health efforts, add up.

Each drop has a ripple effect that extends far beyond their immediate impact. And as we navigate choppy waters and make do with the resources that we have in the field and in society and in the world in general, these actions can transform into currents of change. So each and every effort that we do matters. What you do matters.

On a personal note, this was a reminder for me to continue to say yes. My yes took me on an adventure of a lifetime, and I hope that your yeses will take you places as well. Thank you. Or as said in cookies. Katie Sue Chapel.