SPEAKER 1: I'm co-director for NTM program at the University of Miami, and also I'm director for NTM program in Miami VA Hospital. And what I do is I see patients with advanced pulmonary diseases, including bronchiectasis, COPD, lung cancer, and lung transplant candidates with NTM infections, including mycobacterium avium complex infection.

My research team focused on finding association with different disease and NTM, and understanding why we have higher number of this disease in United States. And for understanding that, we reviewed 1.2 million COPD patients and finded out what is high risk related to this infection. And among them, we finded out that 5,000 patients had NTM, and NTM increased risk of mortality and death, due to COPD infection.

And follow-up for COPD study, our research team focused to understand what is the effect of e-cigarettes, and smoking, and vaping on increasing risk for NTM? For that experiments, we cultured human epithelial cells and endothelial cells and making a lung model. And on top of it, we vaped an add e-cigarette media, and we finded out very interesting results. That those samples that we add mycobacterium and e-cigarettes media together, replication of microbacteria three times increased whenever exposed to e-cigarettes, compared to saline. And this paper going to be published next month in *American Thoracic Society Journal.*

COPD is a structural damage in the lung. So in this specific disease, always we have inflammation. And that specific inflammation in the lung change environment, change mucus production, and change microbiome in the lung, that make a perfect setting for environmental bacteria, including NTM and MAC to sit on it, an invasive form of disease develop, and end up to significant disease, that we call MAC infection.