Outbreaks of *Mycobacterium tuberculosis* (TB) continue to be a challenge in the United States. Public health professionals use laboratory methods, such as genotyping, to determine when people get TB from the same strain of bacteria. Genotyping can help scientists pinpoint outbreaks that otherwise might be hidden. Since TB that spreads from one person to another will have the same genetic make-up, scientists can isolate bacteria from different people in the laboratory and compare the genetic sequences to find cases caused by the same strain of the bacteria.

But this tool also can mistakenly indicate an outbreak where there isn’t one, especially for genotypes that are common in the population. False matches can slow down the work of local public health professionals as they try to identify, track, and control a potential outbreak when this occurs. It also consumes resources without leading to an effective solution.

CDC scientists studying TB believe genomic surveillance has the power to increase the accuracy of outbreak detection.
Since the project began in 2014, investigators have used advanced molecular detection (AMD) technologies to characterize thousands of *Mycobacterium tuberculosis* isolates from patients in more than 80 genotype clusters nationally. This information has allowed local and state TB control programs to focus resources on those clusters and patients with recent TB transmission where interventions are most useful.

Investigators also sequenced approximately 5,000 *M. tuberculosis* isolates to create a new analytic pipeline. While the previous analytic pipelines only allowed for the comparison of relatively small numbers of similar strains, this new pipeline allows for comparison of thousands of diverse strains. Additionally, to help expand sequencing capacity, CDC funded five state public health laboratories in 2016 to conduct WGS on approximately 200 *M. tuberculosis* isolates per month. As work continues, CDC is getting closer to the ultimate goal of developing the expertise, tools, and infrastructure necessary nationally to conduct genomic surveillance of all isolates of *M. tuberculosis* in the United States.

For more information on *Mycobacterium tuberculosis*, please visit the CDC website, [www.cdc.gov/tb](http://www.cdc.gov/tb).