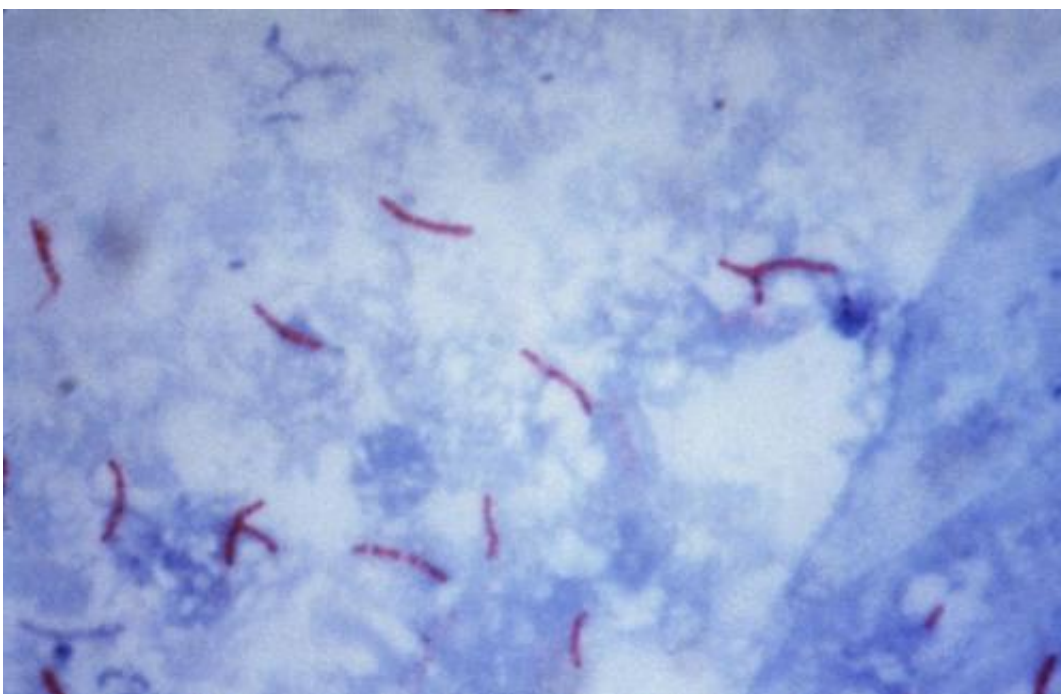


Study provides new evidence on role of person-to person transmission in drug-resistant tuberculosis

January 19 2017



This photomicrograph reveals *Mycobacterium tuberculosis* bacteria using acid-fast Ziehl-Neelsen stain; Magnified 1000 X. The acid-fast stains depend on the ability of mycobacteria to retain dye when treated with mineral acid or an acid-alcohol solution such as the Ziehl-Neelsen, or the Kinyoun stains that are carbolfuchsin methods specific for *M. tuberculosis*. Credit: public domain

A study published today in *The New England Journal of Medicine* provides compelling evidence that extensively drug-resistant tuberculosis

(XDR TB) is spread from person-to-person in the KwaZulu-Natal province, South Africa from 2011-2014. The study was conducted by a team of researchers from Emory University, the U.S. Centers for Disease Control and Prevention, Albert Einstein College of Medicine, and the University of KwaZulu-Natal in South Africa and was funded by the U.S. National Institute of Allergy and Infectious Diseases at the National Institutes of Health. It builds on a growing body of evidence showing that person-to-person transmission, not just inadequate treatment, is driving the spread of drug-resistant TB.

South Africa is experiencing a widespread epidemic of XDR TB, the deadliest form of TB, including a tenfold increase in cases between 2002 and 2015. The study found that the majority of cases (69 percent) in high HIV- and high TB-burden areas happened due to person-to-person [transmission](#) rather than inadequate TB treatment in South Africa. By using social networks analysis, the study identified numerous opportunities for transmission not only in hospitals, but also in community settings, such as households and workplaces. The study has important implications for efforts to prevent drug-resistant TB, which have traditionally focused on ensuring that patients receive accurate and complete TB treatment.

"These findings provide insight as to why this epidemic continues despite interventions to improve TB treatment over the past decade. Public health and research efforts must focus more intensely on identifying and implementing additional or new interventions that halt transmission in hospitals and community settings," says Neel R. Gandhi, MD, associate professor of epidemiology at Emory's Rollins School of Public Health.

The study included 404 XDR TB patients in KwaZulu-Natal, South Africa and was led by a team of researchers including Gandhi and Sarita Shah, MD, MPH, of CDC's Division of Global HIV & TB.

Researchers examined the role of transmission by combining robust genotyping methods with social network and epidemiologic analysis. The study is the first of its kind, bringing together these multiple state-of-the-art methods to study XDR TB transmission in a high-incidence setting.

"These findings are further proof that we need to better detect, prevent, diagnose, and treat drug-resistant TB," says CDC Director Tom Frieden, MD, MPH. "TB resistant to last-resort drugs is spreading through hospitals and homes, at work, and in other places in this high burden community. The only way to stop this disease is by improving infection control and rapidly finding and effectively treating people with TB."

What is XDR TB?

Drug-resistant TB is a significant global epidemic. Reported in 105 countries, XDR TB is resistant to at least four of the key anti-TB drugs. In most settings, treatment is effective less than 40 percent of the time, with death rates as high as 80 percent for patients who also have HIV.

Interrupting the spread of TB can be particularly challenging in countries most affected by the disease. In settings with limited resources, measures to prevent the spread of TB such as contact tracing, implementation of effective infection control measures, improved ventilation in hospitals and better training for healthcare workers, can be difficult.

Study authors suggest that breaking the cycle of transmission of drug-resistant TB requires a greater focus on [infection control](#) efforts - while also maintaining global programs to quickly detect and effectively treat all people with TB.

Provided by Emory University

Citation: Study provides new evidence on role of person-to person transmission in drug-resistant tuberculosis (2017, January 19) retrieved 2 May 2024 from <https://medicalxpress.com/news/2017-01-evidence-role-person-to-person-transmission.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.