

# More intensive methods needed to identify TB in HIV-prone populations

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Identifying tuberculosis patients in Africa using passive methods is leaving many cases undiagnosed, according to researchers from the Netherlands, Kenya and the United States, who studied case detection methods in HIV-prone western Kenya. Tuberculosis (TB) occurs commonly in men and women with HIV, but in these patients TB can be more difficult to detect.

The findings were published online ahead of the print edition of the American Thoracic Society's [American Journal of Respiratory and Critical Care Medicine](#).

"Limited information exists on the prevalence of [tuberculosis](#) and the best methods of identifying TB patients in [African populations](#) with high rates of HIV," said study author Anja van't Hoog, MD, MSc, physician-researcher and epidemiologist, Academic Medical Centre, University of Amsterdam. "In this study, our goals were to estimate how many individuals have TB confirmed by bacteriological testing and the number of cases which occur along with HIV, as well as to evaluate case detection."

In passive detection, which has been the method predominantly used in Kenya and globally since the 1970s, diagnoses are made only after patients present to health clinics and report a prolonged period of coughing. Dr. van't Hoog, who conducted the study while serving as an epidemiologist at the Kenya Medical Research Institute, said more aggressive, intensive methods of detection are needed to help identify

more cases, and identify them earlier.

"Previous studies have suggested that passive case finding might be adequate for TB control," she noted. "However, TB epidemiology has changed dramatically as a result of the HIV epidemic, and there is little information available regarding the prevalence of tuberculosis and the effectiveness of case-finding in African populations with high rates of TB and HIV. "

The researchers recruited 20,566 adults from 40 randomly sampled village clusters in a rural area of western Kenya and collected two sputum samples from each adult. Samples were evaluated using a smear microscopy test. Participants also were given questionnaires about their exposure to TB and nearly all participants agreed to undergo a chest X-ray. Those with abnormal X-ray findings or symptoms suggesting TB each provided an additional sputum sample for examination by sputum culture, a testing method which is much more sensitive than smear microscopy.

Following evaluation, 123 participants were identified as having tuberculosis. TB prevalence was greater among men, those who had received prior TB treatment and those in the lowest socioeconomic level. HIV information was available for 101 of the 123 TB-positive participants, of whom 51 percent were identified as being infected with HIV. The researchers estimated 48 percent of the undiagnosed burden of TB in the population is due to HIV.

Diagnosing TB earlier and more accurately can help prevent severe illness and death from TB, and reduce transmission of TB to other community members, Dr. van't Hoog said. Men and women with HIV infection are at much greater risk of getting TB, but the presentation of TB is more often atypical in patients with HIV, making diagnosis more difficult, she added.

"Most of the identified TB cases in this study would not have been identified by the current case detection approach, which includes symptom recognition, sputum smear microscopy and chest X-ray," Dr. van't Hoog noted. "Culturing sputum samples offers more accurate results, but is a more complicated, costlier procedure, making it largely unavailable in resource-limited settings.

"This study identified a considerable prevalence of infectious and largely undiagnosed pulmonary tuberculosis in western Kenya, where rates of HIV infection are high," she said. "The goals for TB control are unlikely to be met without continued improvements in case detection. Intensified case finding is required to control TB in this resource-limited, high HIV-prevalence setting, and future research should focus on ensuring these goals are met."

Provided by American Thoracic Society

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