

Simple, rapid TB diagnosis feasible in low-resource, high-burden settings

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A streamlined approach to tuberculosis (TB) diagnosis requiring a single sputum sample and providing rapid, accurate results to patients proved feasible in rural Uganda, according to research presented at the ATS 2016 International Conference.

At four community health centers, [patients](#) learned the same day as their visit if their sputum was positive for TB when analyzed using [fluorescence microscopy](#). If negative, the sputum was sent immediately to a lab, where it was reanalyzed using GeneXpert MTB/RIF (Xpert), a much more sensitive test. Xpert results were reported back to the health center via automated text messaging.

The goal of the pilot was two-fold (1) to test the feasibility of this approach in a country where TB is endemic and (2) to assess its ability to increase the numbers of patients tested and initiated on [treatment](#) for TB, said lead author Priya B. Shete, MD, clinical instructor and research fellow at the University of California, San Francisco. Before the study, patients were typically required to provide two sputum samples, often on separate days, and microscopic analysis was rarely completed the day of the patient's visit.

Access to Xpert testing relied on sputum being transported on average once per week to a testing facility with results brought back the following week.

Of the 822 patients referred for TB testing, researchers found:

- 12 percent had TB, of whom 75 percent were diagnosed using fluorescence microscopy and 25 percent were diagnosed using Xpert.
- 67 percent testing positive for TB using fluorescence microscopy began treatment within 1 day.
- 67 percent testing positive for TB using Xpert began treatment, on average, within 6 days.
- 20 percent testing positive for TB did not start treatment.

The researchers are now expanding their study to 20 Ugandan [health centers](#), where they will measure cost effectiveness of the approach and test different tools for further increasing treatment initiation rates, including sending text messages to the patient and offering financial incentives to patients. Although the cost of TB diagnosis and treatment is free in Uganda, as it is in most countries where the burden of TB is high, Dr. Shete said direct and indirect costs are often "catastrophic for patients in Uganda with chronic cough." Those costs include lost wages, childcare and transportation.

Dr. Shete added that performing rapid molecular testing on-site, which may be possible with newer technology, could be needed to maximize diagnosis and treatment initiation rates.

The researchers were encouraged that pilot clinics increased the percentage of TB testing for patients whose symptoms were consistent with TB. In previous studies, researchers found that only 21 percent of such patients were worked up for TB.

"Clinicians in Uganda can see 50 to 100 patients a day, so they often

can't focus on one disease," Dr. Shete said. "We identified people at each clinic, however, who could focus on TB and worked with the clinic to improve the training of all clinicians who might see TB patients. The results are promising, but there is more work to be done."

More information: Abstract 11955: Feasibility of a Streamlined Single-sAMPLE (SIMPLE) TB Diagnosis and Treatment Initiation Strategy in Uganda

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