

# Xpert Ultra test for diagnosing TB now included in Cochrane Review

June 10 2019

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Credit: LSTMED

Tuberculosis (TB) causes more deaths globally than any other infectious disease and is a top 10 cause of death worldwide. Globally in 2017, of the estimated 10 million people with TB, 3.6 million were not reported to national TB programmes, many of whom were not being diagnosed with their disease. When it is detected early and effectively treated, TB is largely curable, but in 2017, around 1.6 million people died of tuberculosis, including 300,000 people living with HIV.

Xpert MTB/RIF and Xpert Ultra, the newest version, are the only World Health Organization (WHO)-recommended [diagnostic tests](#) that rapidly

and simultaneously detect TB and rifampicin resistance, in persons with signs and symptoms of TB, and are suitable for use at lower levels of the health system.

This Cochrane Review update is part of a suite of Cochrane Reviews that will inform an upcoming WHO meeting to update guidelines on these tests.

Key findings from this Cochrane Review update:

- The review identified 95 studies, integrating 77 new studies since the previous Cochrane Review.
- For detection of pulmonary TB, Xpert MTB/RIF sensitivity and specificity were 85% and 98%.
- For detection of rifampicin resistance, Xpert MTB/RIF sensitivity and specificity were 96% and 98%.
- In the one study that directly compared Xpert Ultra and Xpert MTB/RIF, Xpert Ultra yielded a higher sensitivity (88%) than Xpert MTB/RIF (83%), and a lower specificity (96%) than Xpert MTB/RIF (98%).

The review author team found Xpert MTB/RIF to be sensitive and specific for diagnosing pulmonary TB and rifampicin resistance, consistent with findings reported previously. Compared with Xpert MTB/RIF, Xpert Ultra had higher sensitivity and lower specificity for TB detection and similar sensitivity and specificity for rifampicin resistance detection (one study). Xpert MTB/RIF and Xpert Ultra provide accurate results and can allow rapid initiation of treatment for multidrug-resistant TB. The ongoing use of Xpert MTB/RIF or Xpert Ultra in TB programmes in high TB burden settings, as well as use in primary care clinics where the test provides the opportunity to begin treatment promptly, will contribute evidence on whether their use leads to improvements in patient health.

Cochrane Infectious Diseases Group (CIDG) Editor and review author Karen Steingart stated, "We hope that this Cochrane Review update will enable anyone who is interested to find high-quality information about Xpert MTB/RIF and Xpert Ultra." Lead author, Associate Professor David Horne (University of Washington, Seattle) added, "Future studies should assess the diagnostic accuracy of Xpert Ultra compared with other rapid tests for TB and drug resistance, especially in difficult-to-diagnose groups, such as children, people living with HIV, and those with extrapulmonary TB. Understanding the impact of Xpert Ultra on patient health outcomes will be important."

**More information:** David J Horne et al. Xpert MTB/RIF and Xpert MTB/RIF Ultra for pulmonary tuberculosis and rifampicin resistance in adults, *Cochrane Database of Systematic Reviews* (2019). [DOI: 10.1002/14651858.CD009593.pub4](https://doi.org/10.1002/14651858.CD009593.pub4)

Provided by Liverpool School of Tropical Medicine

Citation: Xpert Ultra test for diagnosing TB now included in Cochrane Review (2019, June 10) retrieved 25 April 2024 from <https://medicalxpress.com/news/2019-06-xpert-ultra-tb-cochrane.html>

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