

## **A nurse-based algorithm for earlier diagnosis of smear-negative pulmonary tuberculosis in HIV-infected adults in Lesotho**

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**Background:** Tuberculosis is the commonest cause of mortality in HIV-infected people in Lesotho. Diagnosis of pulmonary TB (PTB) in such patients is often delayed for two reasons: their sputum smear results are frequently negative and there is a shortage of doctors in the country to assess such patients and prescribe TB treatment when indicated for smear-negative PTB. This delay increases morbidity and mortality.

**Methods:** An algorithm was designed to facilitate nurse diagnosis of PTB in HIV-infected adults with either a dry cough or at least 2 negative sputum smears in the Scott Health Service Area, Lesotho. Nurses will be trained in the use of this algorithm, including radiology training to recognise pleural effusions and miliary patterns on chest radiograph. All adult PTB suspects assessed by nurses using the algorithm will be prospectively evaluated with respect to the following outcomes: proportion diagnosed with smear-negative PTB and started on TB treatment, alternative diagnoses, clinical outcomes, a doctor's review of the cases and chest radiographs and subsequent TB culture results. The diagnostic accuracy of the nurse-based algorithm will be evaluated, as will the reduction in diagnostic delay attributable to the use of the algorithm.

**Results:** To be determined in at least 50 adults.

**Conclusion:** In a resource-limited setting, training nurses in the use of a simple diagnostic algorithm may reduce diagnostic delay associated with smear-negative PTB in HIV-infected adults.