

## TUBERCULOSIS DIAGNOSTIC DELAY IN HIGH-INCIDENCE SHANTYTOWN COMMUNITIES

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Delayed tuberculosis (TB) diagnosis increases morbidity, mortality and the risk of TB transmission. Sputum microscopy is the principal TB diagnostic test globally but is insensitive, so patients often require repeated testing. We therefore studied the relative contribution of health-seeking behavior and suboptimal tests to the total delay in TB diagnosis. Newly diagnosed TB patients (n=233) in 16 Peruvian shantytowns were interviewed to determine their 'health-seeking delay' from symptom onset until visiting a medical facility and their subsequent 'testing-delay' until their TB was diagnosed, principally by sputum microscopy. The health-seeking delay was considerably greater than the testing-delay (median 21 vs 2 days) and patients started their treatment soon after being diagnosed (median 1 day). Diagnostic delays were characterized in 3 distinct groups: (1) Rapid Diagnosis. Most patients (60%) had a relatively short total diagnostic delay from symptom onset to diagnosis (median 21 days, IQR 10-25; maximum 35). These patients sought medical care within a median of two weeks and were diagnosed a median of one day later; (2) Delayed Health Seeking. A further 27% of patients had prolonged symptoms before visiting a health-post (median 70 days, IQR 59-115; maximum 365) but were then diagnosed rapidly (median 1 day; IQR 1-10; maximum 30); and (3) Prolonged Testing. The remaining 13% of patients visited a health post soon after symptom onset (median 15 days; IQR 10-30; maximum 45) but then had a prolonged testing delay (median 50 days, IQR 38-76; maximum 150). In conclusion, most patients were diagnosed soon after symptom onset. Delayed health-seeking made a much greater contribution to total diagnostic delay than the subsequent time required for tests to make the diagnosis. Increasing test speed and sensitivity should accelerate TB diagnosis, but there is greater potential impact from interventions that encourage patients to seek medical care earlier in their illness.