RISK OF NOSCOMIAL TRANSMISSION AND TESTS FOR MDR-TB

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Purpose: The emergence of XDR-TB has heightened awareness of the need to avoid nosocomial transmission. A number of new tests are now available to assist the detection of drug resistant tuberculosis, either by screening cultured isolates or through direct testing of clinical specimens. However, whereas the rapidity and expense of laboratory tests is frequently reported the risks associated with the technology are not often discussed. A study was performed to compare and document risks associated with performing laboratory tests for MDR-TB.

Methods: A review was undertaken of published literature on tests for detecting MDR-TB. A theoretical risk assessment was undertaken for each of eighteen testing technologies. Application of tests to cultured isolates was considered separately from testing clinical specimens directly. A scoring system was developed to enable simple comparison of methods. Assessment included the theoretical risk of nosocomial transmission associated with sample collection, sample processing and disposal. Risk to patients, clinical/nursing staff and laboratory personnel were considered.

Results: There is a paucity of data on the risks of nosocomial infection arising from testing for drug resistant tuberculosis. Molecular tests present intrinsically lower opportunities for nosocomial transmission than traditional phenotypic culture-based methods. The risk of nosocomial transmission within the laboratory varies with different phenotypic testing technologies. Tests that require collection of smear positive sputum specimens may involve increased risk for clinical staff and patients.

Conclusions: The safety of testing for drug resistant tuberculosis is a neglected topic in the international literature that warrants increased attention. Direct testing of clinical specimens rather than cultures may reduce risk of infection for laboratory personnel but not for clinical staff or patients. Molecular tests may be more appropriate than phenotypic methods in settings with poor laboratory infrastructure.