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## TB and Mycobacteriology Laboratory, CPHL.

### Update: Susceptibility Testing of *M.tuberculosis* complex (MTBC) Isolates

As of January 2006 the TB and Mycobacteriology Laboratory at the Central Public Health Laboratory will be instituting new methodology for susceptibility testing of MTBC isolates. The new method utilizes non-radiometric testing (BACTEC 960) and will replace the radiometric method currently in use (BACTEC 460).

The following will constitute the first and second-line panels of anti-tuberculosis drugs for susceptibility testing: First-line: Isoniazid (INH). Critical concentration 0.1mg/L. High level concentration 0.4mg/L ; Rifampin (RIF), 1mg/L; Ethambutol (EMB), 5 mg/L; Pyrazinamide (PZA), 100mg/L  
Second-line: Streptomycin; Capreomycin; Clofazamine; Amikacin; Ethionamide; Ofloxacin; Rifabutin.

Note: Streptomycin has been removed from the first-line panel (CLSI M24-A, Vol. 23. No. 18)

#### Please note the following:

- All initial MTBC isolates are tested against the first-line drug panel.
- If resistance is found at the critical concentration of INH (0.1mg/L), testing will be repeated with a higher level (0.4mg/L), as per CLSI recommendations. Isolates demonstrating resistance at the lower level only will have a note attached: "Test results indicate a low level of resistance to INH. Some experts believe that patients infected with strains exhibiting low level resistance may benefit from continued therapy with INH".
- If resistance is found to RIF, or to any two first-line drugs, the isolate will be tested against the second-line panel. Second-line testing can also be requested when clinically warranted (eg.. adverse reaction to first-line drugs)
- Any isolate found to be resistant to PZA will be further speciated to determine whether the identity is *M. bovis* or *M. bovis* BCG. A further report will be issued if one of these species is identified. Please indicate on the test requisition if the patient is undergoing *M. bovis* BCG bladder instillation therapy.
- Any MTBC isolate obtained from a patient's specimen three months after a primary isolate, will be re-tested with the first-line panel to determine if resistance has developed.
- All initial isolates from patients are archived and are available for further testing, such as strain typing, as required.

The average turn-around time (TAT) for susceptibility testing is 7 days from the date that the culture is identified. The TAT may vary depending on the growth characteristics of the strain.

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