Wisconsin State Laboratory of Hygiene
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To: WMLN laboratorians and Public Health partners

We are excited to report that starting 1/20/2026, the Wisconsin State Laboratory of Hygiene (WSLH) will begin offering phenotypic fluoroquinolone (FQ) drug susceptibility testing as a part of our current *Mycobacterium tuberculosis* complex (MTBC) First-Line Drug Susceptibility test [MM00257].

The WSLH currently performs phenotypic drug susceptibility testing (pDST) for the standard first-line MTBC drugs isoniazid (INH), rifampin (RIF), ethambutol (EMB) and pyrazinamide (PZA; testing currently suspended due to manufacturer reagent issues). In 2022, a new 4-month fluoroquinolone-containing treatment regimen (isoniazid, rifapentine, moxifloxacin, and pyrazinamide) was promoted by CDC and others as an alternative first-line treatment for susceptible MTBC[1]. Use of FQ antibiotics (moxifloxacin, MOX) is recommended for treatment of MTBC strains resistant to two or more first-line antibiotics in place of the more toxic second-line injectable drugs (amikacin, kanamycin, capreomycin) or as a replacement for one of the first-line antibiotics for patients unable to tolerate the standard first-line treatment regimen. As the use of FQ-containing regimens becomes increasingly common in Wisconsin, the ability to test MTBC isolates for phenotypic FQ resistance is becoming more important for patient care. The addition of moxifloxacin to our current testing panel will allow us to more rapidly provide FQ susceptibility information to patients for whom FQ are being considered for their MTBC treatment regimen, rather than sending patient isolates to a national reference lab at a later time for this testing.

Unlike pDST testing for INH, RIF, EMB, and PZA, there are currently no FDA-approved products for fluoroquinolone susceptibility testing. As the MGIT system is a WHO-recommended method and is already in use for other MTBC first-line drugs, a laboratory-developed method following the MGIT960 protocol was validated for phenotypic moxifloxacin testing. The WHO-established critical concentration breakpoint of 0.25 µg/ml is used to test patient isolates[2]. Isolates will be reported as either "Susceptible" or "Resistant" to MOX at the tested concentration. Known MTBC fluoroquinolone resistance mechanisms generally provide resistance to all drugs in the class; as moxifloxacin is the only FQ specifically included in a recommended MTBC treatment regimen, moxifloxacin susceptibility testing will be performed as a representative of FQ antimicrobials.

This testing update will go live on 01/20/2026. All MTBC isolates submitted to WSLH for MTBC First-Line Drug Susceptibility testing [MM00257] will automatically have MOX susceptibility testing performed. Please note: as a result of increasing costs of laboratory equipment and supplies, the cost for this test will also increase to $325 on this date.

Please let us know if you have any further questions or concerns!

Best,

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1. Carr W, Kurbatova E, Starks A, Goswami N, Allen L, Winston C. Interim Guidance: 4-Month Rifapentine-Moxifloxacin Regimen for the Treatment of Drug-Susceptible Pulmonary Tuberculosis — United States, 2022. MMWR Morb Mortal Wkly Rep 2022;71:285–289.
2. World Health Organization (2018). Technical report on critical concentrations for drug susceptibility testing of medicines used in the treatment of drug-resistant tuberculosis. World Health Organization.