

Implementation of *Mycoplasma genitalium* resistance testing within the diagnostic laboratory

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Mycoplasma genitalium (MG)

Overview

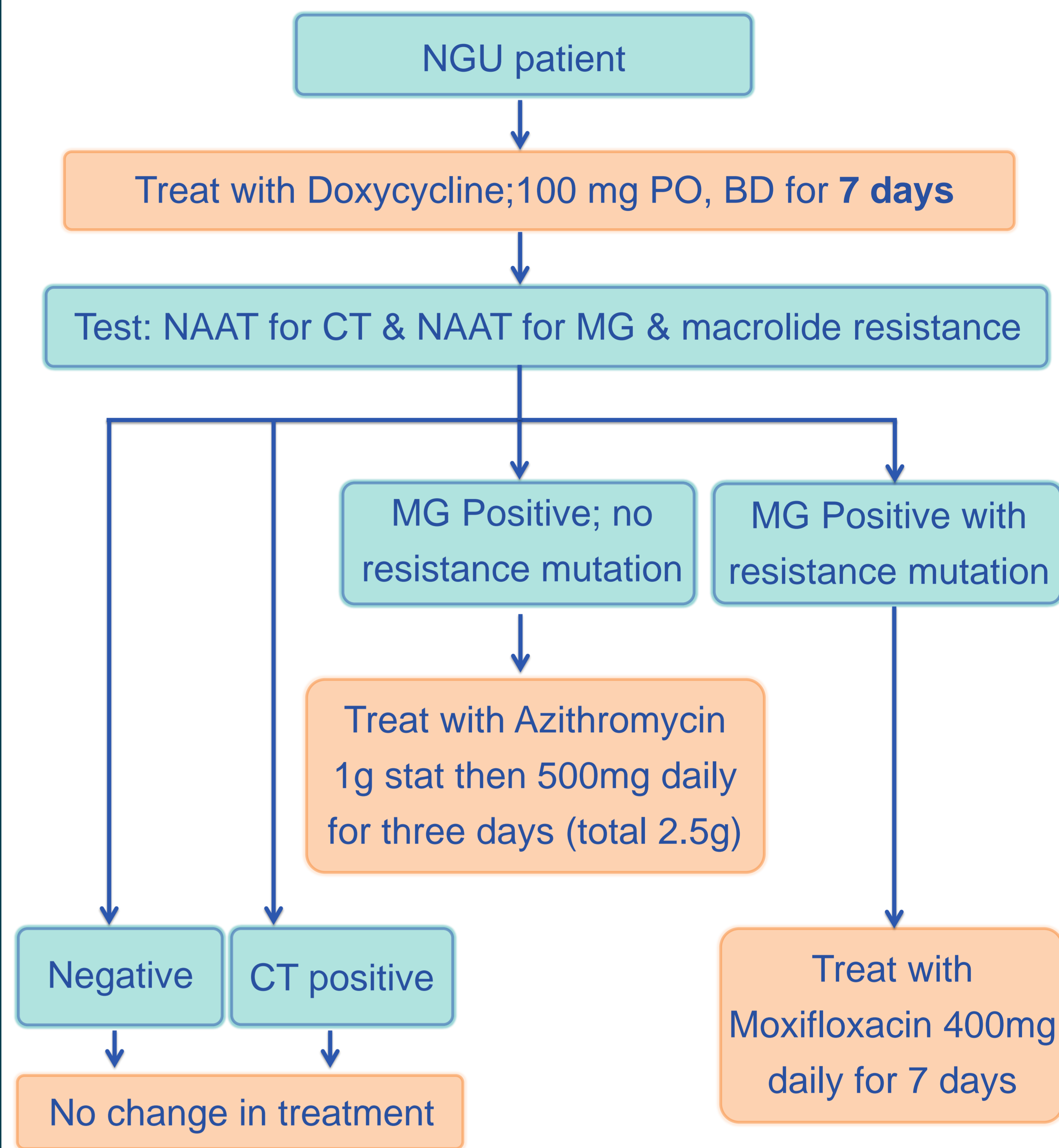
- MG is an established cause of urethritis, cervicitis, Pelvic Inflammatory Disease (PID). NAAT testing for MG is available in reference laboratories and some private laboratories
- Treatment of MG is complicated due to emerging macrolide resistance caused by 23S rRNA mutations. Testing for macrolide resistance mutations can guide the choice of therapy
- International guidelines recommend not to test low-risk asymptomatic patients for MG. This is conflicting to established CT/NG testing algorithms
- Here we will demonstrate a flexible & cost effective testing algorithm, referencing the new Australian STI guidelines as an accepted treatment algorithm

Australian MG Guideline Evidence based recommendations

- The prevalence of MG macrolide resistance is >50% in Australia ¹
- Doxycycline only cures ~30% of MG infections, but can lower bacterial load in most cases ^{2, 3, 4}
- Treatment of MG with macrolides is more successful in infections with lower bacterial load ^{2, 3, 4}
- Greater confidence with sequential azithromycin treatment if prescribed based on macrolide-sensitivity

australian
STI MANAGEMENT
GUIDELINES
FOR USE IN PRIMARY CARE

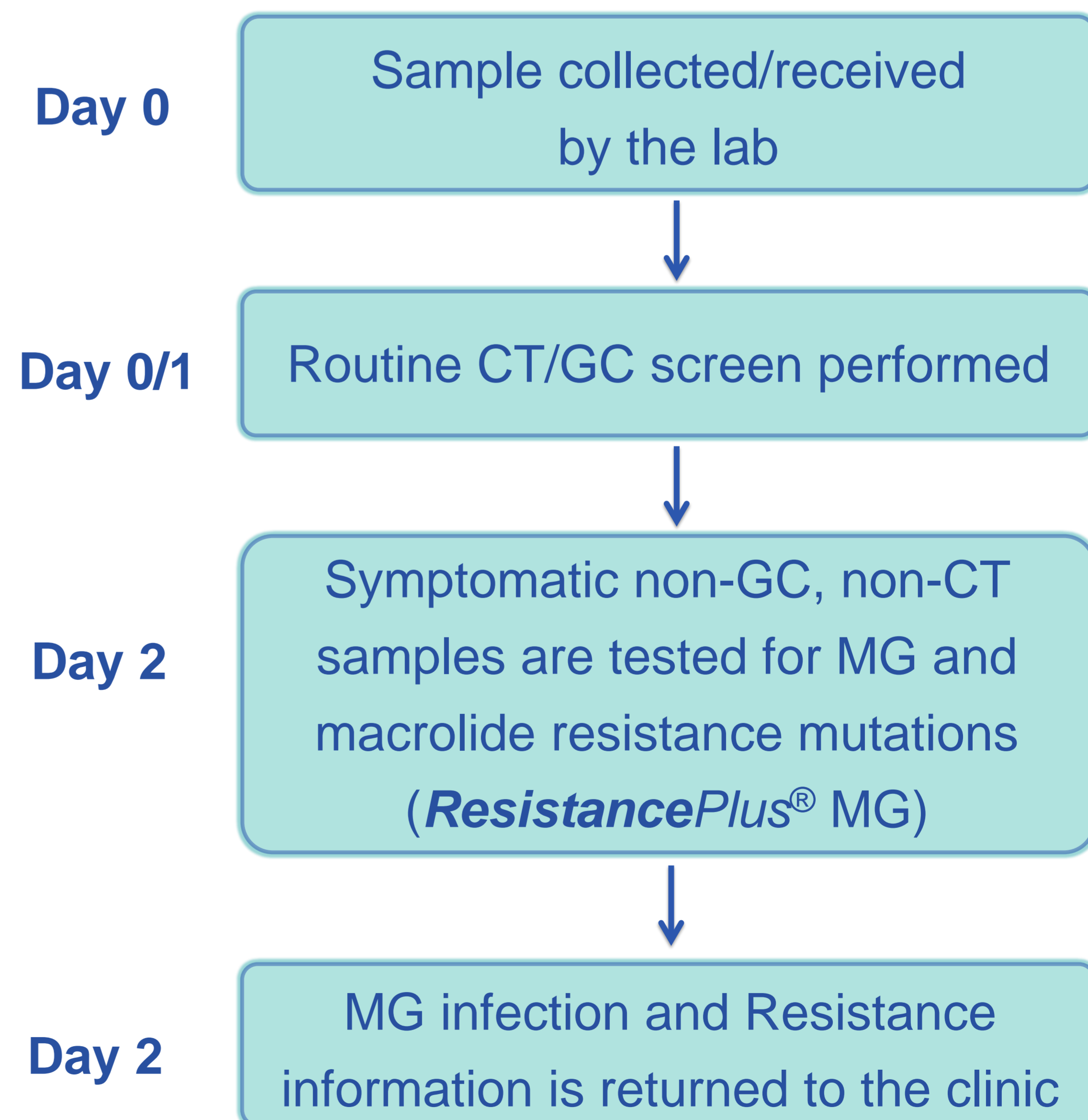
Management guidelines for NGU ¹



How to implement MG testing within the laboratory

Considerations in deciding your test algorithm

- Calculate the MG prevalence in your population. Based on published data, you can generally expect:
 - 1% low risk populations ^{5,6,7}
 - 3% high risk populations ^{5,6,7}
- Who to test? Patients with symptoms you may include are NGU, PID, Cervicitis, urethritis, anorectal condition. In most labs this number will be below 1,000 samples per annum.
- With these volumes, MG detection-only tests paired with a resistance reflex test will increase your workload and cost disproportionately
- The Australian MG guideline recommends 7 days treatment with doxycycline ¹. This allows a lab to batch MG tests 1, 2 or 3 times per week to meet clinical demand
- Here we will propose a testing/treatment algorithm which follows the Australian STI Management Guidelines for MG



With this simple workflow, any laboratory can implement a required test with minimal disruption or resource requirement.

References

1. The Australian STI management guidelines for use in primary care <http://www.sti.guidelines.org.au>
2. Read TR, Fairley CK, Tabrizi SN, Bissessor M, Vodstrcil L, Chow EP, Grant M, Danielewski J, Garland SM, Hocking JS, Chen MY, Bradshaw CS. Clinical Infectious Diseases 2016.
3. Guschin A, Ryzhikh P, Rumyantseva T, Gomberg M, Unemo M. BMC Infect Dis 2015; 15: 40.
4. Read TRH, Jensen JS, Fairley CK, et al. Emerging Infectious Diseases 2018; 24(2). (in press)
5. Andersen B, Sokolowski I, Østergaard L, et al. Sex Transm Infect. 2007 Jun;83(3):237-41
6. Oakeshott P, Aghaizu A, Hay P et al. Clin Infect Dis. 2010 Nov 15;51(10):1160-6
7. Manhart LE, Holmes KK, Hughes JP, Houston LS, Totten PAAm J Public Health. 2007 Jun;97(6):1118-25