

A Cost Analysis of Gyrase A Testing and Targeted Ciprofloxacin Therapy Versus Recommended 2-Drug Therapy for *Neisseria gonorrhoeae* Infection(Article)

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[Abstract](#)_ [View references \(27\)](#)

Background Novel approaches to combating drug-resistant *Neisseria gonorrhoeae* infections are urgently needed. Targeted therapy with ciprofloxacin has been made possible by a rapid assay for genotyping the gyrase A (*gyrA*) gene; a nonmutated gene reliably predicts susceptibility to ciprofloxacin. **Methods** We determined the costs of running the *gyrA* assay, 500 mg of ciprofloxacin, 250 mg of ceftriaxone injection, and 1000 mg of azithromycin. Cost estimates for *gyrA* testing included assay reagents and labor. Cost estimates for ceftriaxone included medication, injection, administration, supplies, and equipment. We measured the cost of using the *gyrA* assay and treatment based on genotype using previously collected data over a 13-month period between November 2015 and November 2016 for all *N. gonorrhoeae* cases diagnosed at UCLA. We subsequently developed 3 cost models, varying the frequency of testing and prevalence of *N. gonorrhoeae* infections with ciprofloxacin-resistant or genotype-indeterminate results. We compared those estimates with the cost of recommended 2-drug therapy (ceftriaxone and azithromycin). **Results** Based on a 65.3% prevalence of cases with ciprofloxacin-resistant or genotype indeterminate *N. gonorrhoeae* infections when running an average of 1.7 tests per day, the per-case cost of *gyrA* genotyping and targeted therapy was US \$197.19. The per-case cost was US \$155.16 assuming a 52.6% prevalence of ciprofloxacin-resistant or genotype-indeterminate infections when running an average of 17 tests per day. The per-case cost of 2-drug therapy was US \$142.75. **Conclusions** Direct costs of *gyrA* genotyping and targeted ciprofloxacin therapy depend on the prevalence of ciprofloxacin-resistant or genotype-indeterminate infections and testing frequency. © 2018 Lippincott Williams & Wilkins.

Indexed keywords

EMTREE drug terms: azithromycin, ceftriaxone, ciprofloxacin, DNA topoisomerase (ATP hydrolysing), A
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