**Results of *Neisseria gonorrhoeae* antibiotic susceptibility testing in Massachusetts, January 19, 2023 – December 31, 2024**

**Background**:

In 2022, a novel strain of multi-drug-non-susceptible *Neisseria gonorrhoeae* was identified in two Massachusetts residents. At the time that these cases were identified, the scope of antibiotic non-susceptible *N gonorrhoeae* in Massachusetts was unknown. As a result, MDPH released [a clinical alert on January 19, 2023](https://www.mass.gov/doc/clinical-alert-on-non-susceptible-gonorrhea-january-19-2023/download), in which clinicians were asked to perform gonococcal culture from genital and extragenital sites for symptomatic patients in addition to routine NAAT testing.

**Testing performed:**

In total, there were 833 unique isolates with AST results with a specimen collection date from January 19, 2023 through December 31, 2024. Cultures of *N gonorrhoeae* grew from numerous anatomic sites including urethral, cervical, rectal, pharyngeal, blood, synovial fluid, and ocular.

Table 1: Geographic distribution\* of *N gonorrhoeae* isolates with AST collected since the 2023 clinical alert (January 19, 2023 - December 31\*\*, 2024) by Health Service Region and year\*\*\* (N=829)

|  |  |  |
| --- | --- | --- |
| **Health Service Regions** |  **1/19/2023-12/31/2023** | **1/01/2024-12/31/2024** |
| **Count** | **Percentage** | **Count** | **Percentage** |
| Western | 21 | 3.8 | 10 | 3.7 |
| Central | 26 | 4.7 | 19 | 7.0 |
| Northeast | 116 | 21.2 | 42 | 15.5 |
| Metro West | 120 | 21.9 | 58 | 21.4 |
| BOSTON | 222 | 40.5 | 121 | 44.6 |
| Southeast | 41 | 7.5 | 20 | 7.4 |
| Unknown | 2 | 0.4 | 1 | 0.4 |
| **Total** | **548** |  | **271** |   |

Data are current as of 3/11/2025 and subject to change.

\* Based upon case residence at time of diagnosis

\*\* When an individual patient had cultures positive from multiple anatomic sites on the

same day, only one culture is represented

\*\*\* Definitions of Health Service Regions can be found at: [Health Services Regions.](https://www.mass.gov/info-details/massgis-data-ma-executive-office-of-health-human-services-regions#:~:text=The%20regions%20%2D%20Western%2C%20Central%2C,and%20towns%20(see%20map))

***N gonorrhoeae* susceptibility results:**

Table 2: Antibiotic Susceptibility Results\* for *N gonorrhoeae* isolates collected since the 2023 clinical alert (January 19, 2023 – December 31, 2024) in Massachusetts\*\* by year(N=829)

|  |  |  |
| --- | --- | --- |
| **Antibiotic** |  **1/19/2023-12/31/2023** | **1/01/2024-12/31/2024** |
| **Isolates Tested (N)** | **Percent Susceptible** | **Isolates Tested (N)** | **Percent Susceptible** |
| Cefoxitin | 528 | 100 | 263 | 100 |
| Cefixime | 541 | 100 | 269 | 100 |
| Ceftriaxone | 548 | 100 | 271 | 100 |
| Ciprofloxacin | 548 | 56.4 | 271 | 46.5 |
| Spectinomycin | 528 | 100 | 263 | 100 |
| Azithromycin | 528 | 95.6 | 262 | 95.8 |
| Tetracycline | 60 | 31.7 | 23 | 60.9 |
| Penicillin | 44 | 11.4 |  None Reported | None Reported |

Data are current as of 3/11/2025 and subject to change.

\* Antibiotic susceptibility testing was performed by e-test at the Massachusetts State Public Health Laboratory with additional testing performed at other laboratories including Mayo Clinic Laboratories and Massachusetts General Hospital.

\*\* When an individual patient had cultures positive from multiple anatomic sites on the same day, only one culture is represented.