

CDC Antimicrobial Resistance Threats Report

Drug-resistant *Neisseria meningitidis* Data Methods

Meningococcal disease is a reportable disease in all states, meaning that healthcare providers must report all cases to state or local public health officials. CDC collects information about meningococcal disease through the [National Notifiable Diseases Surveillance System \(NNDSS\)](#). CDC receives NNDSS data each week; these data include limited epidemiologic information.

CDC established Enhanced Meningococcal Disease Surveillance (EMDS) in 2015 to collect more complete data to monitor disease epidemiology, inform public health action, and collect isolates (pure samples of *N. meningitidis*) from a broad and representative population. Health departments from all 50 states and several large jurisdictions participate in EMDS. EMDS focuses on collecting isolates and complete information from all cases, with an emphasis on vaccination history and college attendance status for cases in people aged 18–24 years, history of sex with men for cases in males aged ≥ 16 years, and information on housing stability for all cases.

Estimates were generated by adding the known number of drug-resistant cases among cases with tested isolates (a majority of cases in recent years) to additional drug-resistant cases estimated among cases without tested isolates. Bayesian methods were used to estimate the uncertainty in the number of drug-resistant cases in the population. A flat prior, which assumes that no number of successes is more likely than any other value, was considered. Draws were taken from the posterior distribution assuming a hypergeometric likelihood and 95% credible intervals (range of values likely to include the true value) produced. The hypergeometric distribution assumes that the outcome of one trial influences the probability that the next outcome is a success or failure. This distribution is appropriate for our data given the small population sizes and case counts.

References

1. Centers for Disease Control and Prevention. Meningococcal Disease Surveillance and Trends. Available at: <https://www.cdc.gov/meningococcal/php/surveillance/>. Accessed July 21, 2025.
2. Centers for Disease Control and Prevention. Enhanced Meningococcal Disease Surveillance Report, 2023. Available at: https://www.cdc.gov/meningococcal/media/pdfs/2025/04/NCIRD-EMDS-Report-2023_508.pdf. Accessed July 21, 2025.