CDPH
Chicago Department of Public Health

Increase in Invasive Meningococcal Disease, Chicago, 2023–2024

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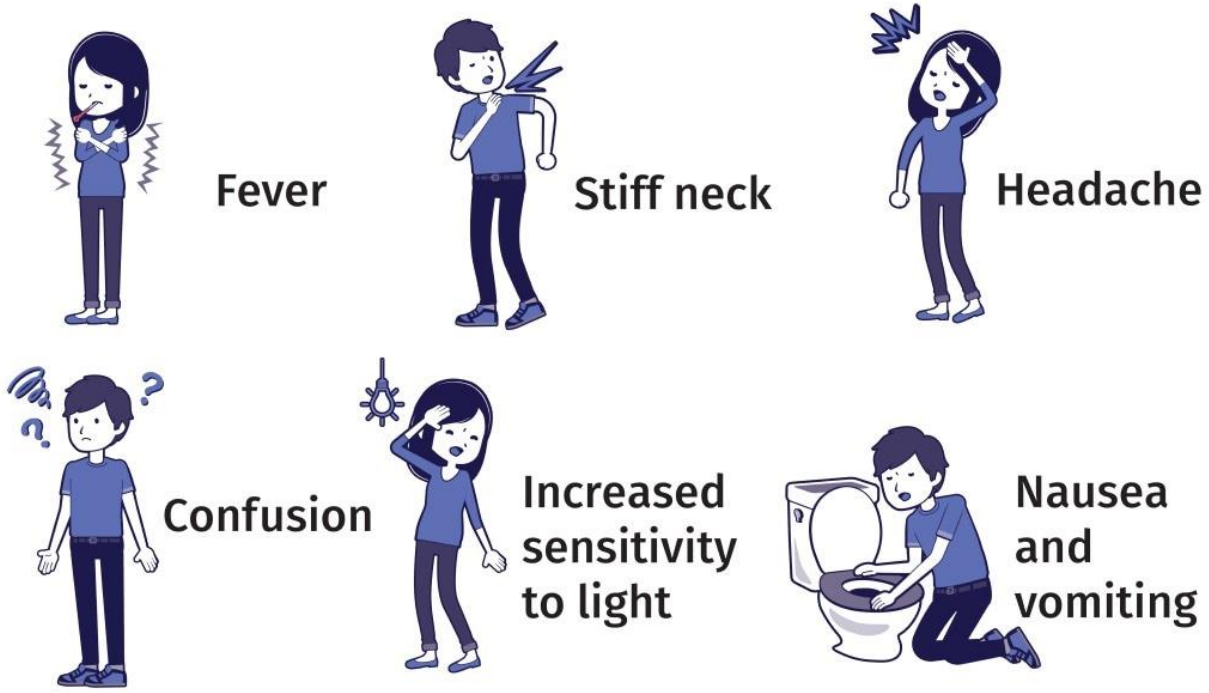
Invasive meningococcal disease is caused by the bacteria *Neisseria meningitidis*

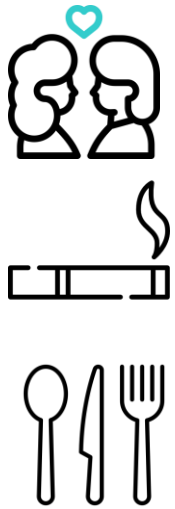
- In about 1 in 10 people, *N. meningitidis* lives in the back of the throat or nose and does not cause symptoms
- In some people, the bacteria spread and cause infection
- Illness usually occurs 2–10 days after exposure

Meningitis and bloodstream infections are the most common types of infection caused by *N. meningitidis*



Meningococcal disease is spread from person to person and requires lengthy or close contact

- Spread occurs through respiratory and throat secretions



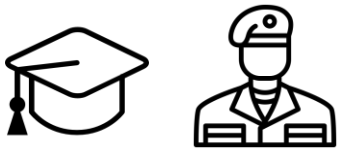
- Examples of lengthy or close contact
  - Living in the same household
  - Sneezing or coughing in someone’s face
  - Kissing
  - Sharing cigarettes
  - Sharing eating utensils

Certain risk factors put people at higher risk of invasive meningococcal infections

Age

Medical conditions

Medications

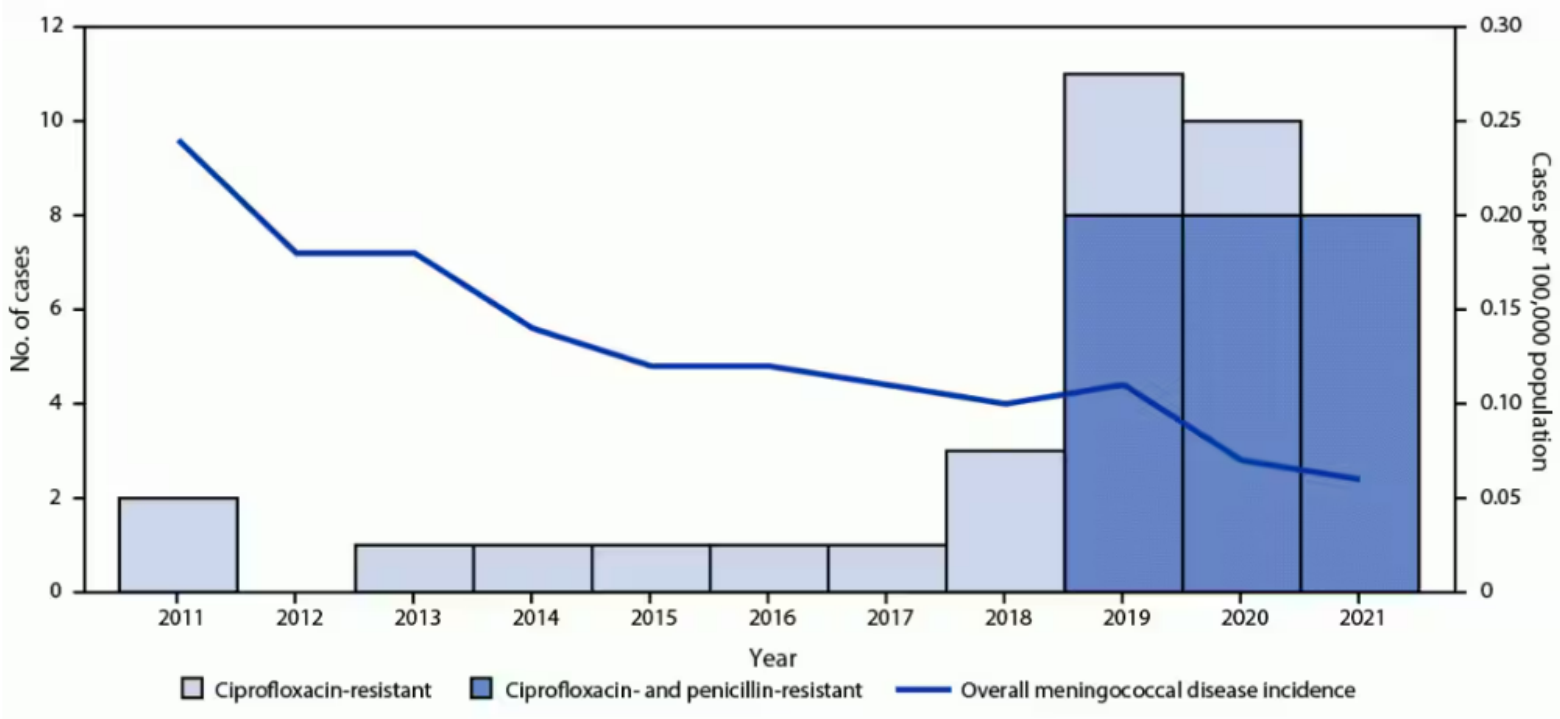


Settings

Travel

Treatment for suspected meningococcal disease should include an extended-spectrum cephalosporin, but antibiotic-resistant strains are increasing

FIGURE 1. Meningococcal disease incidence and number of invasive meningococcal disease cases caused by ciprofloxacin-resistant or ciprofloxacin- and penicillin-resistant strains of *Neisseria meningitidis* — United States, 2011–2021



Berry I, Rubis AB, Howie RL, et al. Selection of Antibiotics as Prophylaxis for Close Contacts of Patients with Meningococcal Disease in Areas with Ciprofloxacin Resistance — United States, 2024. MMWR Morb Mortal Wkly Rep 2024;73:99–103. DOI: http://dx.doi.org/10.15585/mmwr.mm7305a2

3 serogroups cause most meningococcal disease:

B C Y

3 vaccines provide protection:

MenACWY

MenB

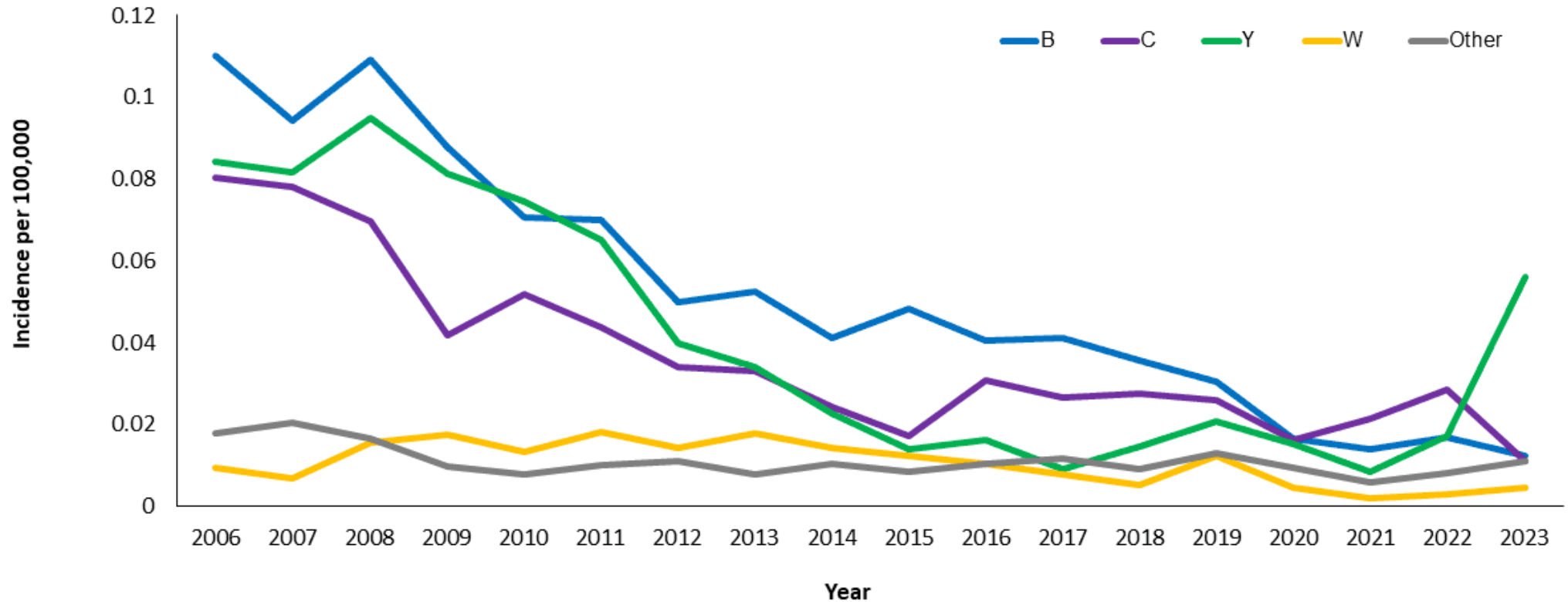
MenABCWY

Talk to a healthcare provider about what vaccines are best for you or your child.

cdc.gov/meningococcal

https://www.cdc.gov/meningococcal/about/index.html

Trends in Meningococcal Disease Incidence by Serogroup – United States, 2006–2023*



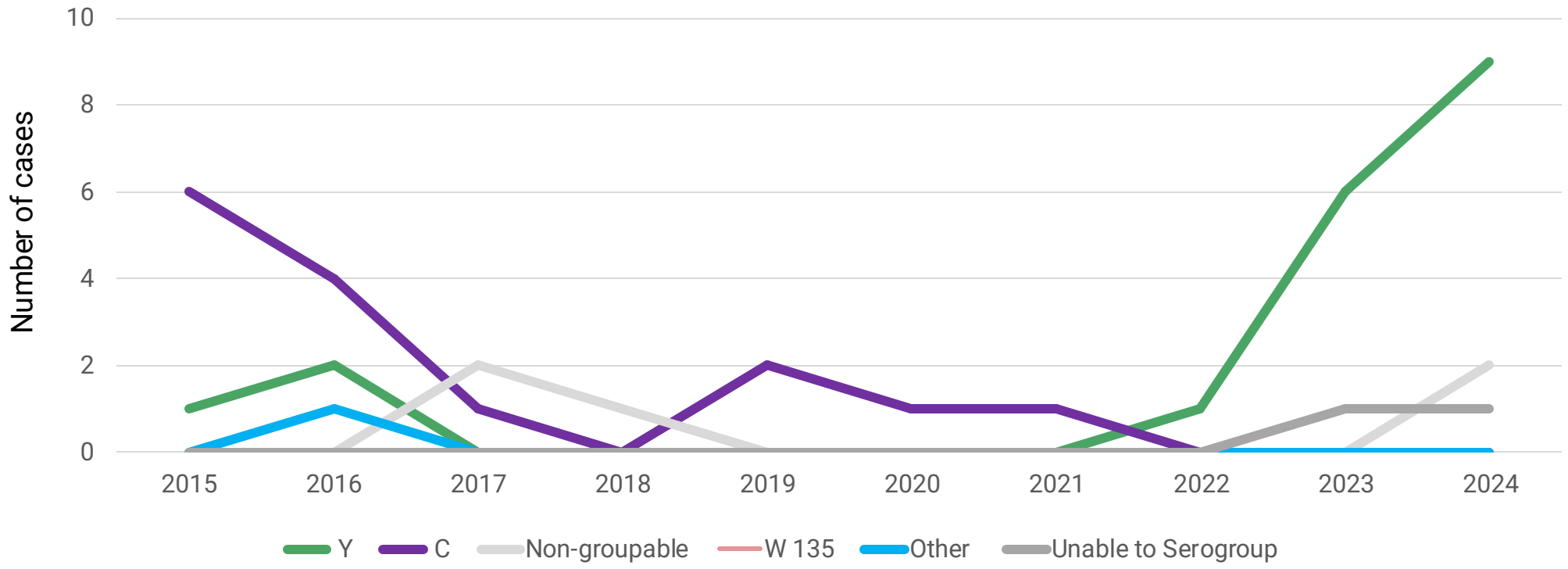
Source: NNDSS data with additional serogroup data from Active Bacterial Core surveillance (ABCs) and state health departments
*2022 and 2023 data are preliminary

https://www.cdc.gov/meningococcal/php/surveillance/index.html

The increase in meningococcal disease is disproportionately affecting certain populations

- People between 30–60 years old
- Black or African-American people
- Adults with HIV

Trends in Meningococcal Disease Incidence in Chicago, 2015–2024



Chicago cases overall mirrored national trends

	N = 19 (%)
Age	52yrs (2mo–86)
Male	11 (57.9)
Non-Hispanic Black	9 (47.4)
Hispanic/Latino	8 (42.1)
Non-Hispanic AI	1 (5.3)
Non-Hispanic White	1 (5.3)
Bacteremia	18 (94.7)
Deaths	5 (26.3)
Congregate Setting	2 (10.5)
Complement Inhibitor	1 (5.3)
HIV positive	1 (5.3)

Over half of cases (58%) were between 30–60 years old, with a median age of 52 years

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Both Black and Hispanic/Latino populations have been disproportionately affected in Chicago

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Nearly all cases have presented with bacteremia

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More than 1 in 4 cases in Chicago have been fatal

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Two cases in 2024 occurred in a congregate setting

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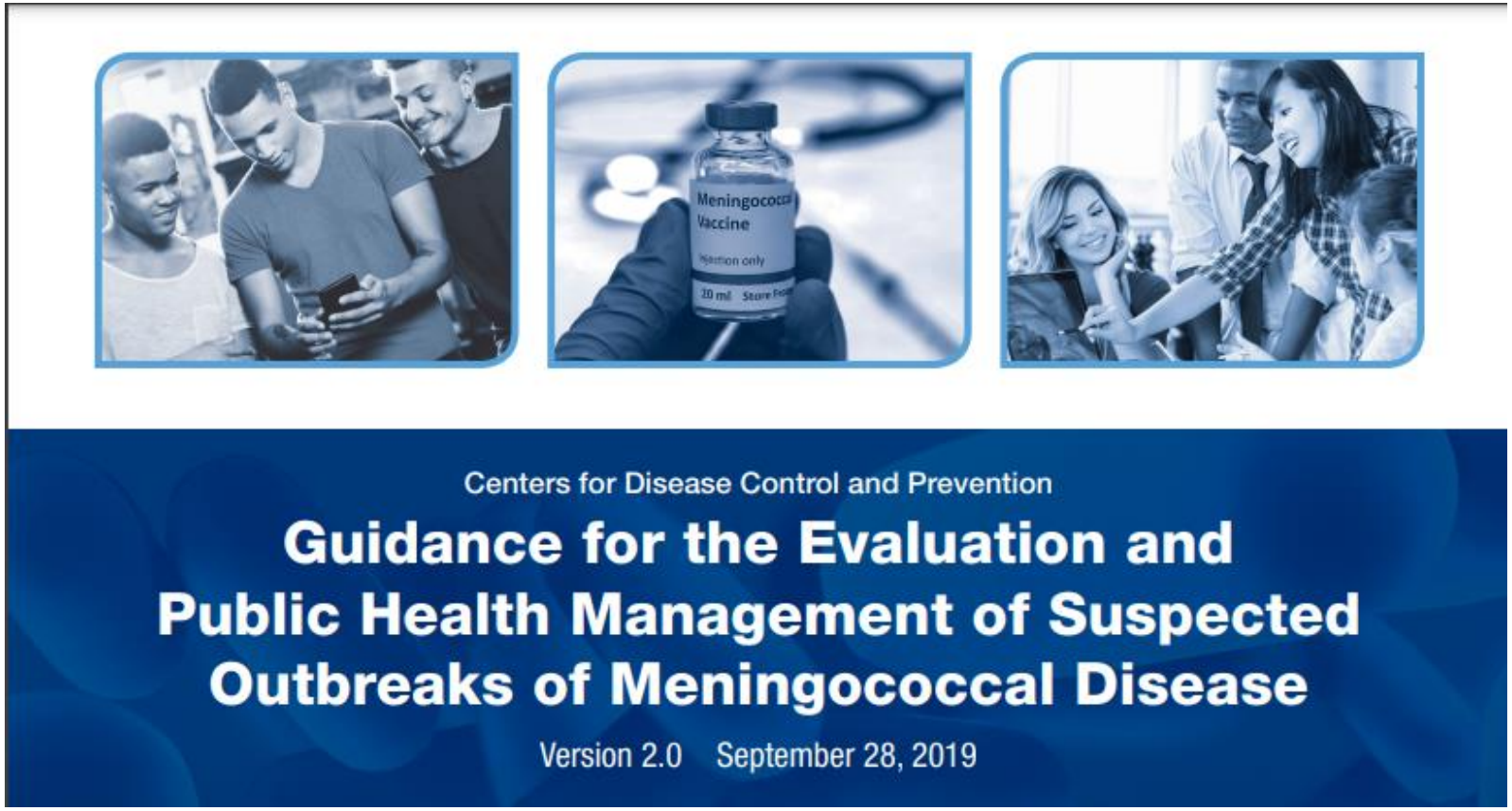
CDC guidance defines outbreaks as community-based or organization-based



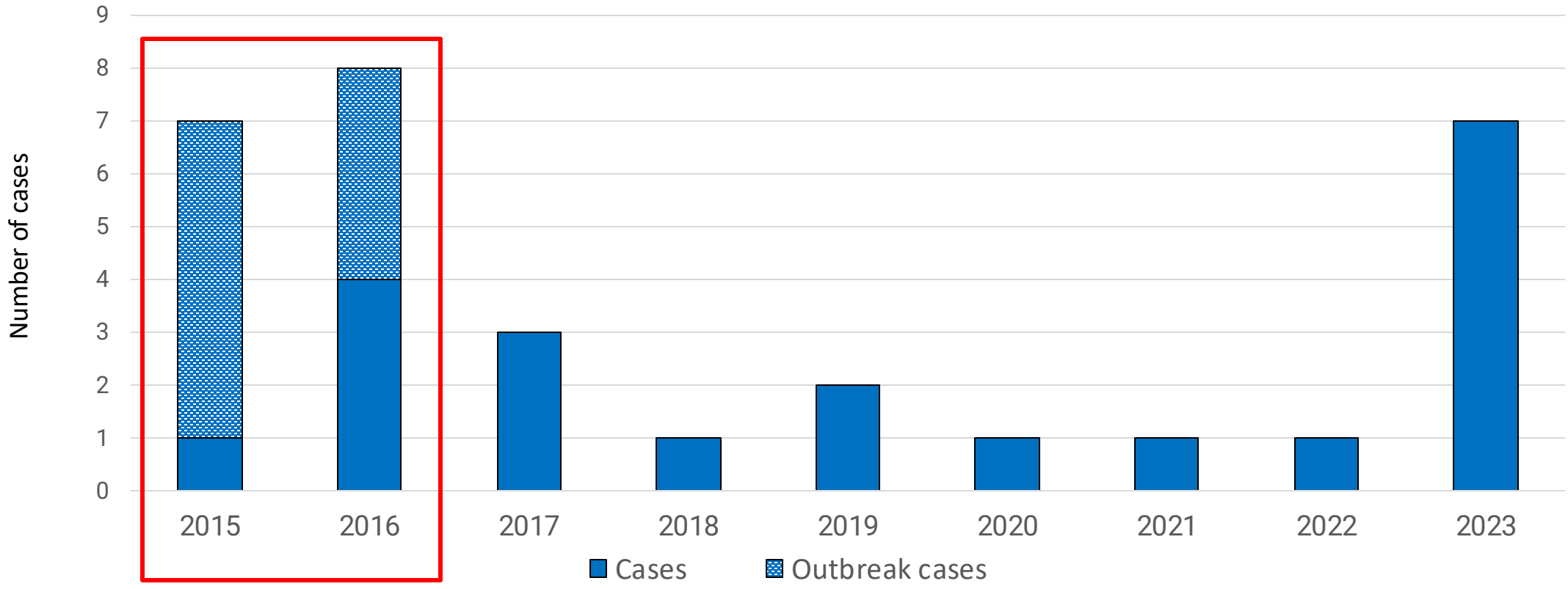
Organization-based outbreak

- Same serogroup
- Cases linked by a common affiliation
  - University
  - Daycare
  - Correctional facility
  - Shelter
- 2–3 outbreak-associated cases in a 3-month period is considered an outbreak

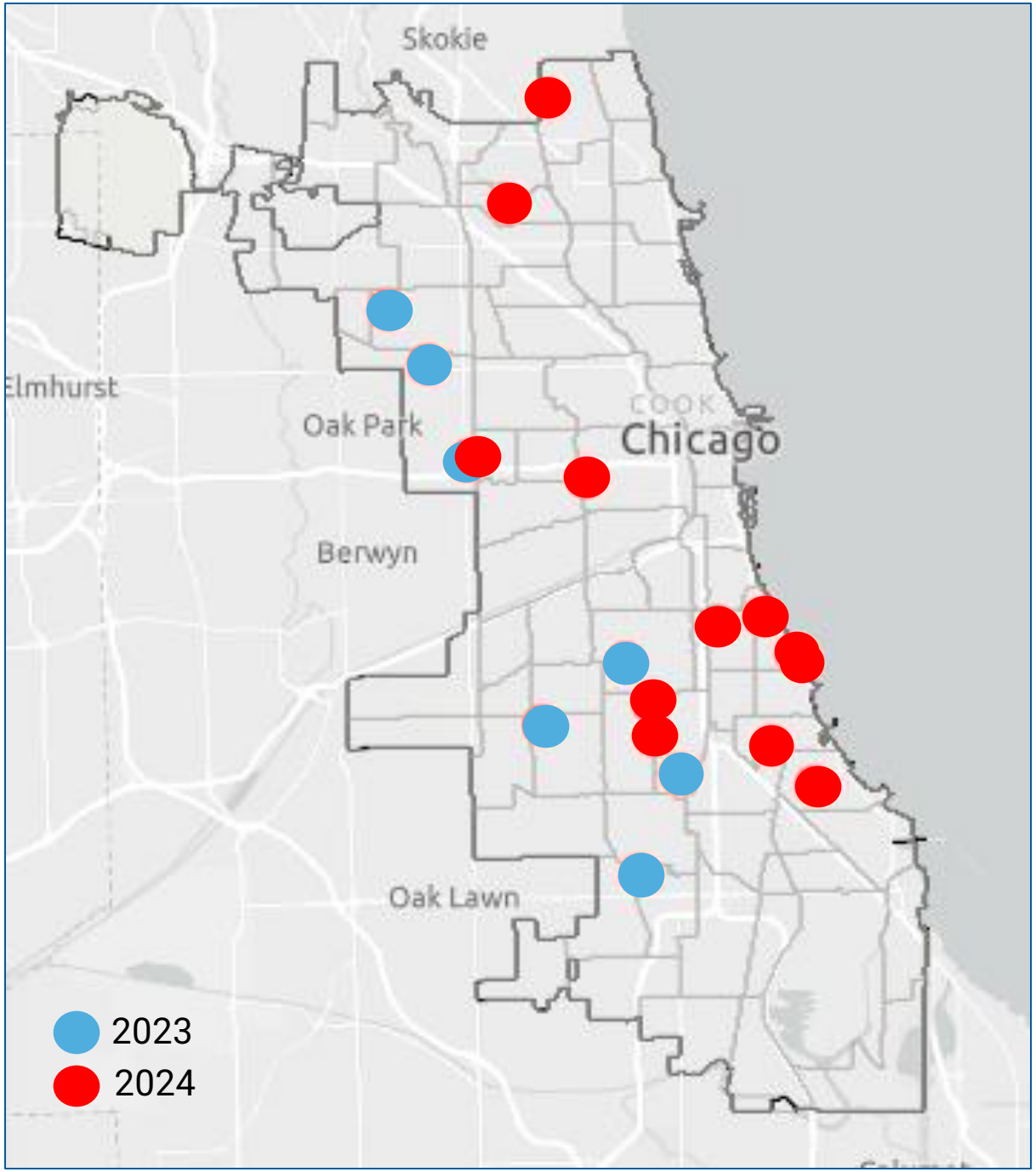
Community-based outbreak

- Same serogroup
- Cases linked by a common geography or a population with shared characteristics
  - Community area
  - Neighborhood
  - Men who have sex with men (MSM)
- Multiple outbreak-associated cases with an incidence of meningococcal disease above what is expected in a community during a 3-month period

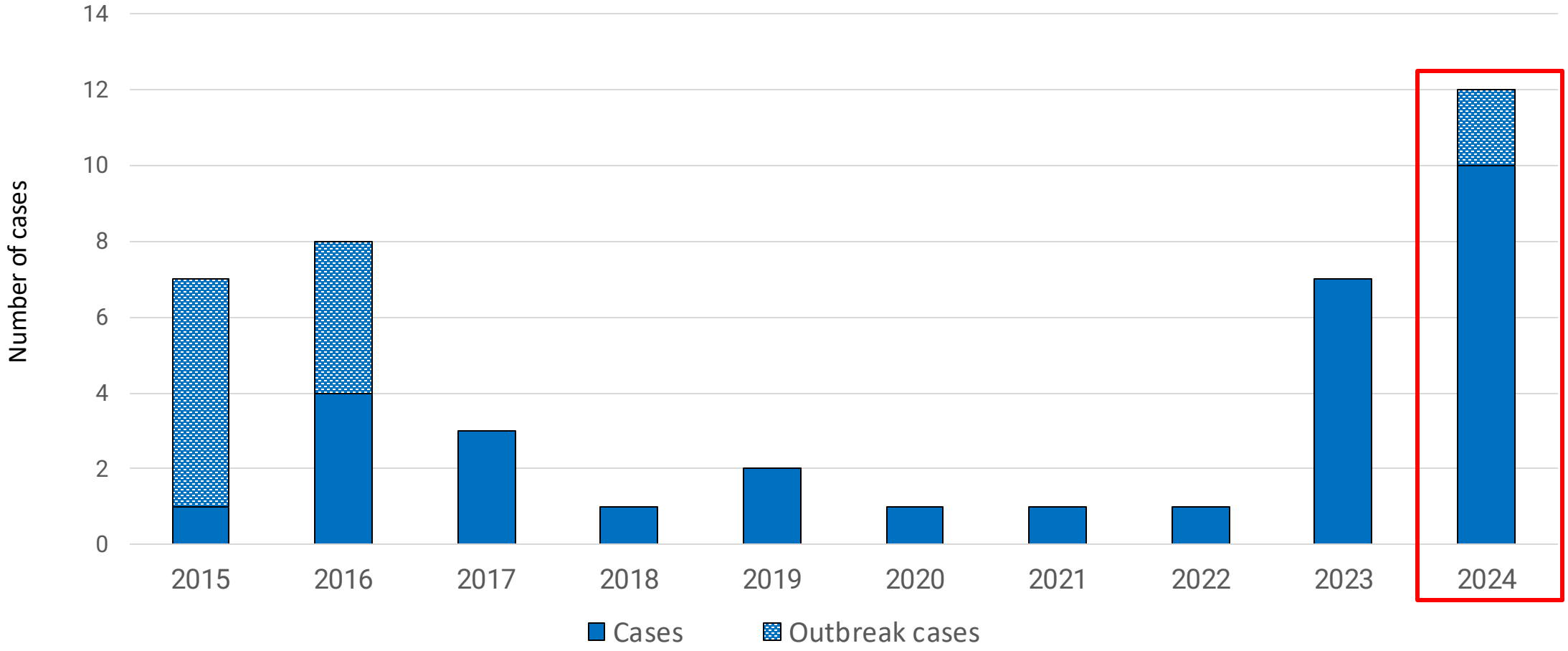
In Chicago, we saw a community outbreak in 2015–2016 among MSM



In 2023-2024, cases were concentrated on the south side of Chicago, but we were unable to identify a community outbreak



In 2024, we did identify 2 cases of invasive meningococcal disease occurring at the same shelter



Two cases in a shelter was considered to be an outbreak and led to a large public health response

- Post-exposure prophylaxis provided to close contacts of case

- Molecular characterization & antimicrobial susceptibility testing

- Consultation with CDC for vaccine strategy

- Outreach to shelter staff & residents

- Infection control assessments

- Vaccination campaign

To date, no additional cases of meningococcal disease have been identified at the shelter

- Three family members received post-exposure prophylaxis

- *N. meningitidis* was not found to be resistant to ciprofloxacin

- Education campaign included multiple daily oral & electronic announcements, posting of educational materials, and at least 4 rounds of door knocking

- 3 vaccine clinics were held in 5 days; 234 doses of Meningococcal ACWY were administered

Takeaways

- Chicago cases of *N. meningitidis* infection are increasing and providers should have a high index of suspicion for meningococcal disease and immediately begin antibiotic treatment which collecting cultures as clinically indicated
- Patients may present with bloodstream infections or septic arthritis and may not have symptoms typical of meningitis
- Outbreaks can occur with as few as 2 cases of disease and require large public health responses, and all cases should be reported to public health as soon as possible

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Thank You!

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