# **Preventing Invasive Meningococcal Disease:** The Invisible Success of Public Health

### Invasive Meningococcal Disease (IMD)

- Includes the spectrum of invasive infections caused by the bacteria Neisseria meningitidis.
- Uncommon, unpredictable, and can present as meningitis, bacteremia, or both.
- Develops rapidly, often among previously healthy persons, and results in death in 10-15% of cases and leaves 20% of survivors with severe, life-long sequelae, such as neurologic damage or limb loss.<sup>1,2,3</sup>
- 6 meningococcal serogroups cause most IMD globally: A, B, C, W, X and Y.<sup>4</sup>

### Meningococcal Disease Incidence, United States, 1970-2021



Historically, IMD incidence has fluctuated, partly due to occasional outbreaks.<sup>5</sup>

With the ACIP recommendation for routine MenACWY vaccination in 2005, IMD incidence has continued to decline.<sup>5</sup>



US rates of meningococcal disease (A, C, W, Y) in 11- to 30-year-olds, 1991-2002 (CDC, Active Bacterial Core surveillance)

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An estimated 1,400-2,800 cases of IMD occurred in the US each year during the period from 1991-2002, prior to the recommendation for routine MenACWY vaccination in 2005.6

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Age (y)

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- Historically, adolescents have the highest rates of carriage of N. meningitidis.<sup>7</sup>
- Individuals  $\geq$  11 years of age accounted for 62% of all IMD, and of these, 75% of cases were caused by serogroups C, W, or Y.<sup>6,8</sup>



### sanofi

0.5

0.0

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### Vaccination recommendation for adolescents may have contributed to decreased IMD incidence

Estimated incidence of meningococcal disease due to serogroups C, W, and Y among adolescents, United States (2000-2017)



- During 2006-2017, after implementation of routine MenACWY vaccination, IMD rates due to serogroups C, W, and Y declined by:
  - 67-89% in adolescents
    11-15 years of age.<sup>9</sup>
  - 48-77% in young adults 16-22 years of age.<sup>9</sup>

## Incidence is Low, Not Zero: Recent Cases of IMD in Age Groups *not* Currently Recommended for Vaccination

Recent IMD outbreaks in serogroups C and Y reinforces the need for MenACWY Vaccination<sup>10</sup>

Trends in IMD - Incidence by Serogroup - United States, 2006-2023\*



\*2023 data are preliminary and may increase

#### Concerning rise in IMD caused by N. meningitidis serogroup Y (MenY) strain, CDC Health Alert Network March 28, 2024<sup>11</sup>

- 2023 saw a significant spike in IMD cases, the highest since 2014, and this trend continues in 2024.
  - In March, CDC reported 143 cases of IMD had occurred in 2024 which represented an increase of 62 cases over the reported 81 cases as of the same date in 2023.
- A particular MenY strain (ST-1466) was responsible for a majority of the cases that occurred in 2023.
  - This disproportionately affected adults (30-60 years of age), Black or African American individuals, and people with HIV.

Routine MenACWY vaccination of adolescents at 11-12 years of age with a booster dose at age 16, remains a critical component for the potential prevention of IMD in an age group with the historically highest rates of carriage and disease



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