

Burden of Meningococcal Disease in Older Adults, United States 1995-2004



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The findings and conclusions in this report are those of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention.

Abstract

Background: Meningococcal disease causes substantial morbidity and mortality in all ages, but little is known about the burden of disease in persons aged ≥65 years in the United States. As the size of this population increases, it is important to understand the epidemiology of meningococcal disease in older adults.

Methods: Active laboratory-based surveillance for meningococcal disease was conducted from 1995-2004 in ten sites through the Active Bacterial Core surveillance program. A confirmed case was defined as isolation of *N. meningitidis* from a normally sterile body site from a person with clinically compatible illness. For this analysis, cases from Oregon were excluded due to an ongoing outbreak of serogroup B disease that was not seen in the rest of the country.

Results: From 1995 to 2004, 14% (297 of 2080) reported *N. meningitidis* cases were in persons aged ≥65 years (median age 77, 79% female). The case-fatality ratio was 21% compared to an overall case-fatality ratio of 12%. Blood was the specimen source for 94% of cases and 36% presented with bacteremic pneumonia. Nine percent of cases were caused by serogroup B, 17% C, 53% Y and 21% other serogroups, compared to 21% B, 28% C, 39% Y and 12% other serogroups in persons aged 35-49. Rates of meningococcal disease in persons aged ≥65 years decreased from 1.23/100,000 population in 1995 to 0.38/100,000 in 2004 (compared to 0.44/100,000 and 0.14/100,000 respectively in persons aged 35-49 years).

Conclusion: Older adults with meningococcal disease have high case fatality, high proportion of bacteremic pneumonia, and increased proportion of serogroup Y disease. Clinicians should be aware of the presentation of meningococcal disease in this age group to ensure early recognition and treatment of patients and prompt use of prophylactic antibiotics for close contacts.

Objectives

- Provide an overview of meningococcal disease in the United States
- Describe the burden of meningococcal disease in persons 65 and older from 1995-2004 in the United States
- Discuss the importance of early recognition and treatment of meningococcal disease in persons 65 and older

Background

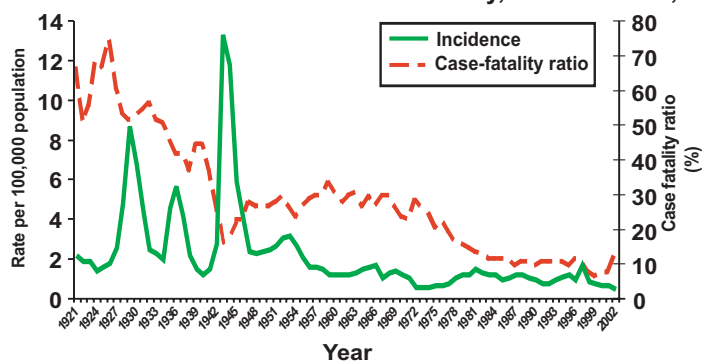
Meningococcal Disease in the US

- Leading cause of bacterial meningitis: 1,400–2,800 cases per year
- Serogroups B, C, and Y most common
- Two vaccines available (MPSV4, MCV4), protect against serogroups A, C, Y, and W-135
- MCV4 licensed in 2005, first available meningococcal conjugate vaccine in US

Meningococcal Disease in Older Adults

- Often not recognized as cause of illness despite increased risk in persons 65 years and older
- Common clinical indications often absent (rash, meningitis), pneumonia more common
- MCV4 not licensed for use in persons in this age group

Meningococcal Disease Incidence and Case-Fatality, United States, 1920-2002



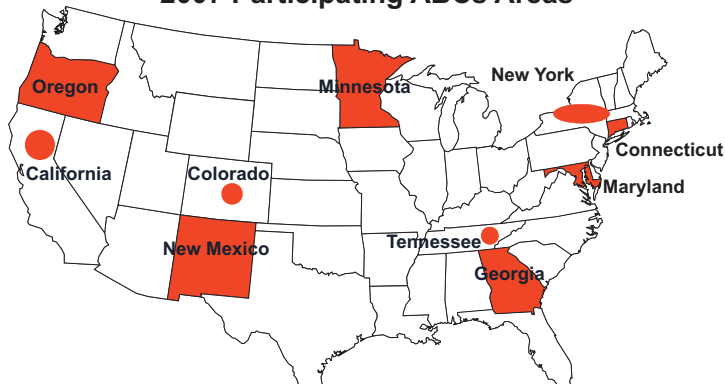
*NETSS data

Methods

Active Bacterial Core Surveillance (ABCs)

- Active laboratory- and population-based system
- For each case of invasive disease, a case report is completed and an isolate sent to CDC for additional laboratory evaluation
- Currently operates among 10 Emerging Infections Program (EIP) sites across the US, representing a population of approximately 39 million
- Due to a serogroup B outbreak in OR during this time period, data from this site was excluded in the analysis (adjusted study population ~36 million)

2007 Participating ABCs Areas



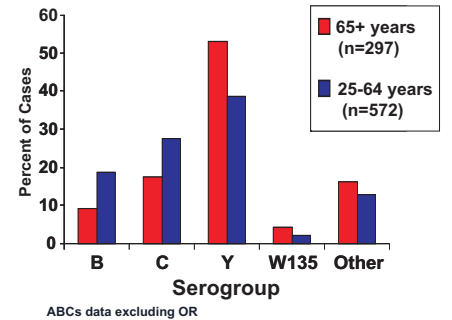
Results

Meningococcal disease in Persons 65 years and Older, 1995-2004

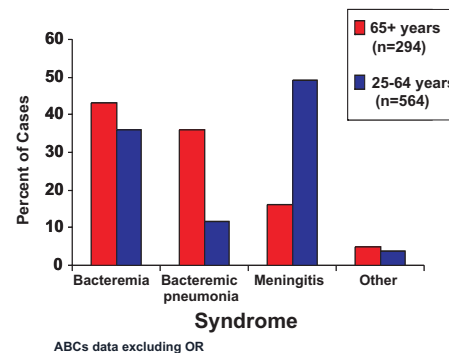
Study Population	
Total Cases	297
Age Range	65 - 103
Median Age	77
% Female	79
Nursing Home Residents	31
% Hospitalized	94

Isolate Source	
% Blood	94
% CSF	4
% Joint	2

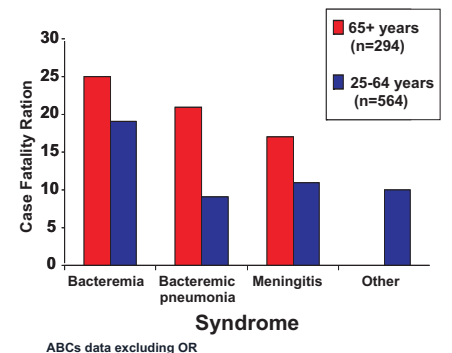
Cases of Meningococcal Disease by Age and Serogroup, 1995-2004



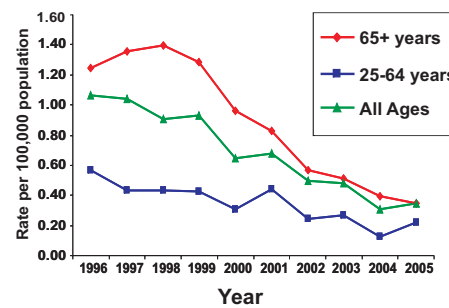
Cases of Meningococcal Disease by Age and Syndrome, 1995-2004



Meningococcal Disease Case Fatality by Age and Syndrome, 1995-2004

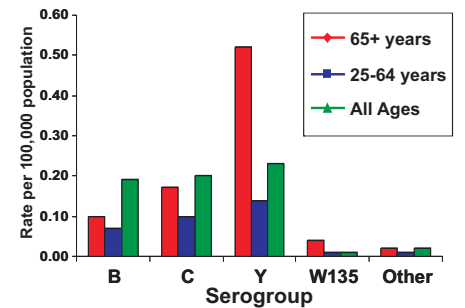


Rates of Meningococcal Disease by Age Group, 1996-2005, United States



Rates calculated adjusting for increased serogroup B disease in Oregon and projected to the 50 states.

Rates of Meningococcal Disease by Age and Serogroup, 1996-2005, United States



Rates calculated adjusting for increased serogroup B disease in Oregon and projected to the 50 states.

Summary

- Increased incidence and case fatality of meningococcal disease in older adults
- Majority of cases in persons 65 and older are caused by serogroup Y
- Predominant clinical syndromes are bacteremia and bacteremic pneumonia, meningitis is less common

Conclusion

- Increased awareness of different clinical presentations of meningococcal disease is necessary
- Early recognition is important for treatment of patients and prompt antibiotic prophylaxis of close contacts
- Older adults may benefit from development of conjugate vaccines for this age group
- More data on clinical presentation in persons 65 and older is needed

Acknowledgments

ABCs

- California EIP
- Colorado EIP
- Connecticut EIP
- Georgia EIP
- Maryland EIP
- Minnesota EIP
- New Mexico EIP
- New York EIP
- Oregon EIP
- Tennessee EIP

CDC

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EIP = Emerging Infections Program