The bacteria are spread through close contact, specifically via respiratory or oral secretions from patients or asymptomatic carriers. Important risk factors for meningococcal disease and carriage among adolescents and young adults include age, social mixing, and smoking. Serogroup B Disease & Vaccines

The meningococcal vaccine routinely administered to all adolescents does not protect against serogroup B, leaving persons aged 16 to 23 years at risk for serogroup B disease. Serogroup B meningococcal disease caused U.S. outbreaksw from 2009 to 2015, causing meningococcal disease at a Rhode Island college in February 2015 (sequence type ST-9069). MenB (Tritrumpal®, Pfizer), a recently licensed serogroup B meningococcal [MenB] vaccine, was used in response to the outbreak in Rhode Island.

- The three doses were provided in Feb, April, and Sept 2015, with an overall carriage prevalence of 6% with dose 1, 6% with dose 2, and 77% with carriage on enrollment.
- Wearing freshness in Fall 2015 were also offered to the serogroup B vaccine.

Meningococcal Vaccines

- Meningococcal A, C, Y, and W-135 (MenACWY) vaccine: 42% (95% CI: 27, 57)% reduction in carriage of any meningococcal bacteria, no effect on serogroup B meningococci.- Meningococcal A, C, Y, W-135, and MenB (MenACWYMenB) vaccine: 66% (95% CI: 53, 77)% reduction in carriage of MenB meningococci, no effect on carriage of MenACWY meningococci.
- No data regarding MenB-impact on carriage has been published.

Carriage evaluation timing

Methods

- In February 2015, Rhode Island Department of Health declared a meningococcal disease outbreak. To better understand meningococcal vaccine impact on carriage, this evaluation aimed to:
  - Determine meningococcal carriage prevalence among students in an outbreak setting.
  - Assess MenB-impact on carriage.

Table 3. Within-individual changes in carriage over time

Table 4. Participant characteristics and multivariable associations with meningococcal carriage

Figure 1. Distribution of meningococcal carriage isolate serogroups by real-time PCR

Conclusions

- In each round, 20% of students carried meningococcal bacteria, and 6% carried serogroup B by real-time PCR.
- This overall carriage prevalence is comparable to previous studies of meningococcal carriage in the United States.
- These results inform U.S. MenB vaccination guidelines, both for adolescents and young adults, and specifically in outbreak settings.
- Influenza vaccines do not affect carriage, this reinforces the need for high vaccination coverage to protect each individual and emphasizes the role of chemoprophylactic for close contacts.
- Whole genome sequencing is underway to further characterize carriage of MenB.
- We will compare findings with carriage evaluations conducted at other universities (see poster 722).

References

- Krismonahan, M., et al. 2015. We did not find evidence that MenB vaccination impacts carriage, either at the population or individual level. In the past 30 days; *Statistically significant at the alpha = 0.05 level

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Meningococcal Carriage Impact on Meningococcal Carriage and Mass Vaccination Campaign at a College — Rhode Island, 2015-2016

Heidi M. Soeters, PhD, MPH,1,2 Melissa Whaley, MS, MPH,3 Xin Wang, PhD,4 Nicole Alexander-Scott, MD, MPH,5 Kristine C. Goodine,6 Koren Y. Kanadanian, MS, CEJ,6 Catherine M. Kelleher, RN,7 Jessica MacNeil, MPH,8 Stacey W. Martin, MS,9 Lucy A. McKamara, PhD, MS,10–12 Steven S. Eard, MD,13,14 Cynthia Vannender,15 Jeni Vloung,16 Utpala Bandy, MD, MPH, Kenneth Sicard, OP, PhD,17 Manisha Patel, MD, MS,18 and the Rhode Island Meningococcal Carriage Evaluation Team

1Epidemic Intelligence Service, CDC, Atlanta, GA, USA; 2National Center for Immunization and Respiratory Diseases, CDC, Atlanta, GA, USA; 3Rhode Island Department of Health, Providence, RI, USA; 4Providence College, Rhode Island, USA.