

Menningococcal Vaccine Technical Advisory Group Recommendations

Dr. Diana Yu, Board Sponsor
Tara Wolff, Policy Advisor

Neisseria Meningitidis

- Aerobic gram-negative bacteria
- At least 13 different serogroups
- Most of invasive disease caused by serogroups A, B, C, Y, and W
- Spread from person-to-person by sharing secretions (saliva, kissing, or coughing) or lengthy contact, especially if living in same household
- Not spread by casual contact or breathing the same air as an infected person

Source: CDC Epidemiology and Prevention of Vaccine Preventable Diseases Webinar Series October 7, 2015

Meningococcal Disease Pathogenesis

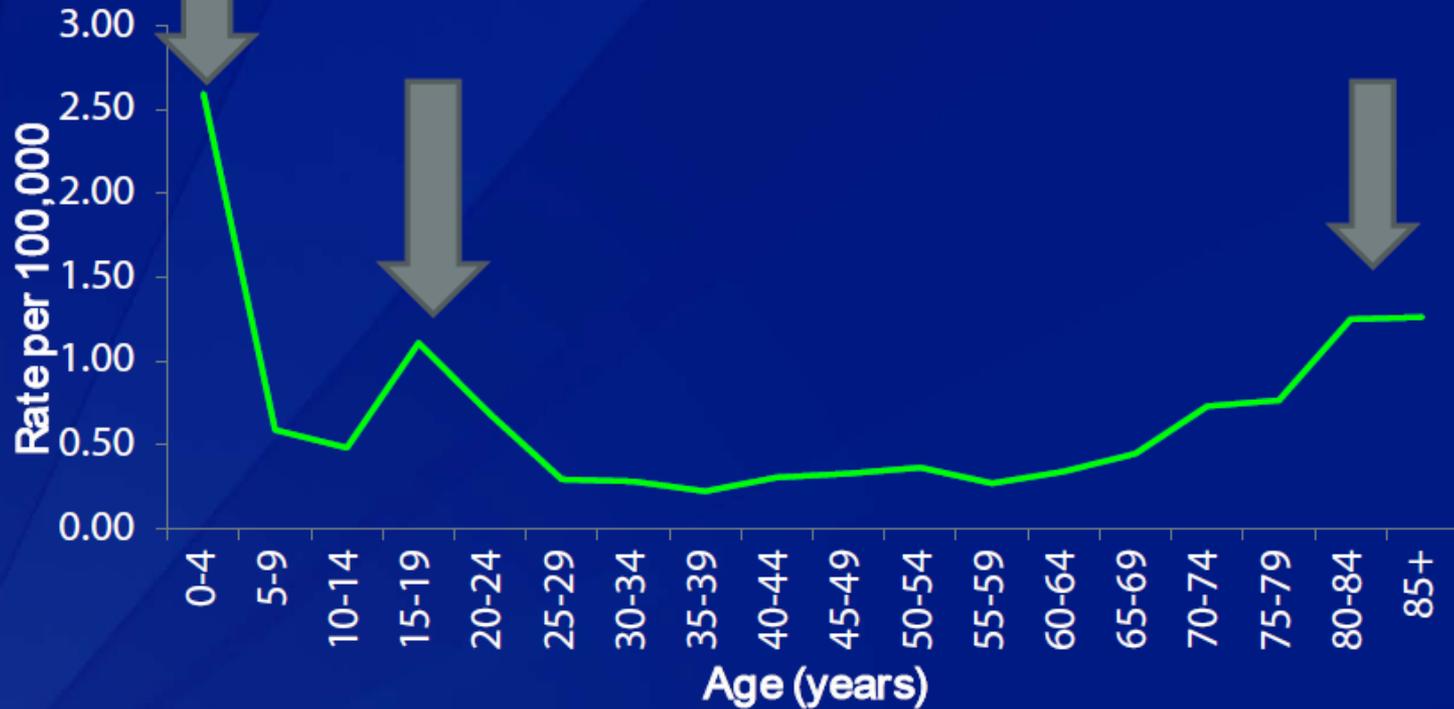
- Colonization of the nasopharynx, not all people who carry bacteria in their nose become ill (carrier)
- In some, the organism enters the blood stream and causes infection at a distant site.
- URI preceding the infection is likely a contributing factor

Risk Factors for Invasive Disease

- Age
 - Infants, adolescents/young adults, and adults >65 years old
- Host factors
 - Persistent complement component deficiency
 - Functional or anatomic asplenia
- Chronic underlying illness

Source: CDC Epidemiology and Prevention of Vaccine Preventable Diseases Webinar Series October 7, 2015

Three Age Peaks in Meningococcal Disease Incidence



ABCs cases from 1993-2012 and projected to the U.S. population with 18% correction for under reporting

Source: CDC Epidemiology and Prevention of Vaccine Preventable Diseases Webinar Series October 7, 2015

Risk Factors for Invasive Disease

- Environmental factors
 - Antecedent viral infection
 - Household crowding
 - Active and passive smoking
- Occupational (microbiologists)
- First year college students living in residence halls at higher risk
- Travel to meningitis belt in sub-Saharan Africa

Source: CDC Epidemiology and Prevention of Vaccine Preventable Diseases Webinar Series October 7, 2015

Meningococcal Disease

Clinical Features

- Incubation period 3-4 days (range 2-10 days)
- Meningococemia and meningitis
- Abrupt onset of fever, meningeal irritation, hypotension, and rash
 - Within hours of the first symptoms, may cause shock, coma, and death
- Fatality rate 10-15%, up to 40% in meningococemia
- Of the people who survive, up to 20% may suffer from serious complication, such as loss of an arm or leg, brain damage, or permanent hearing loss

Source: CDC Epidemiology and Prevention of Vaccine Preventable Diseases Webinar Series October 7, 2015

Meningococcal Disease



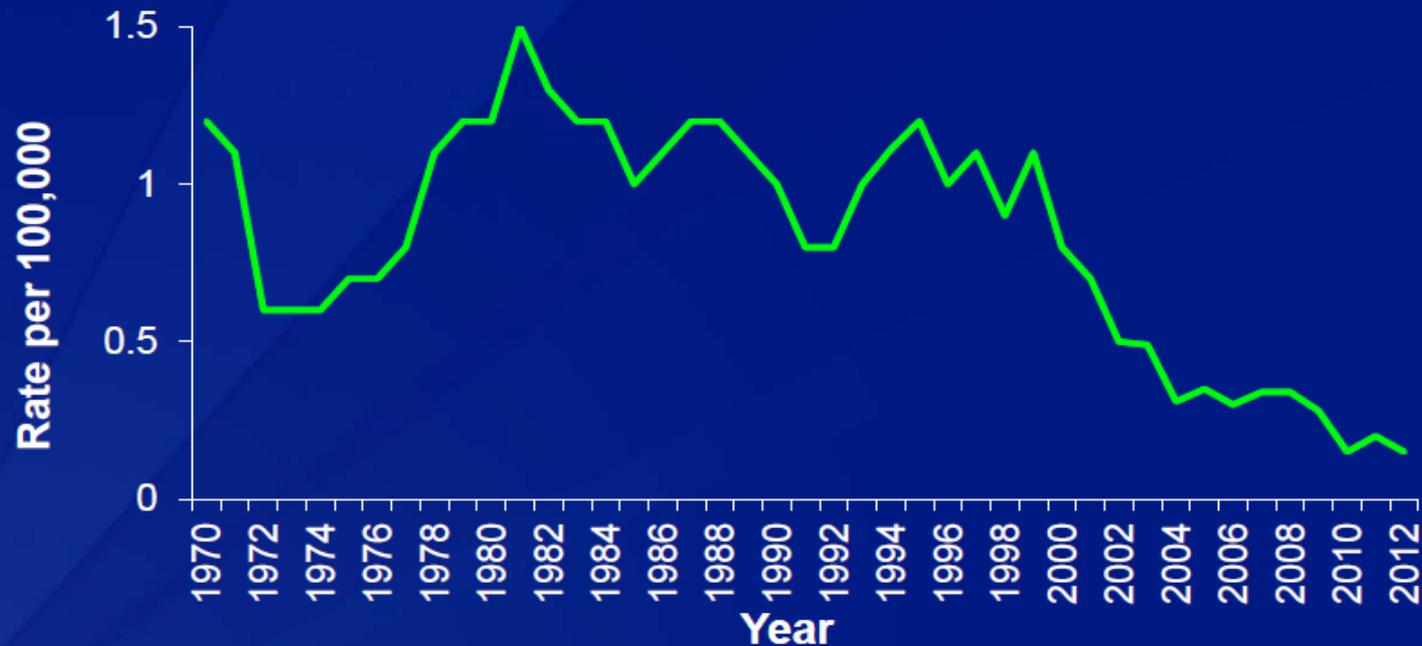
Source: CDC Epidemiology and Prevention of Vaccine Preventable Diseases Webinar Series October 7, 2015

Meningococcal Disease Epidemiology

- Reservoir
- Transmission
- Temporal pattern
- Communicability
- Human
- Respiratory droplets and secretions
- Peaks late winter-early spring
- Generally limited

Source: CDC Epidemiology and Prevention of Vaccine Preventable Diseases Webinar Series October 7, 2015

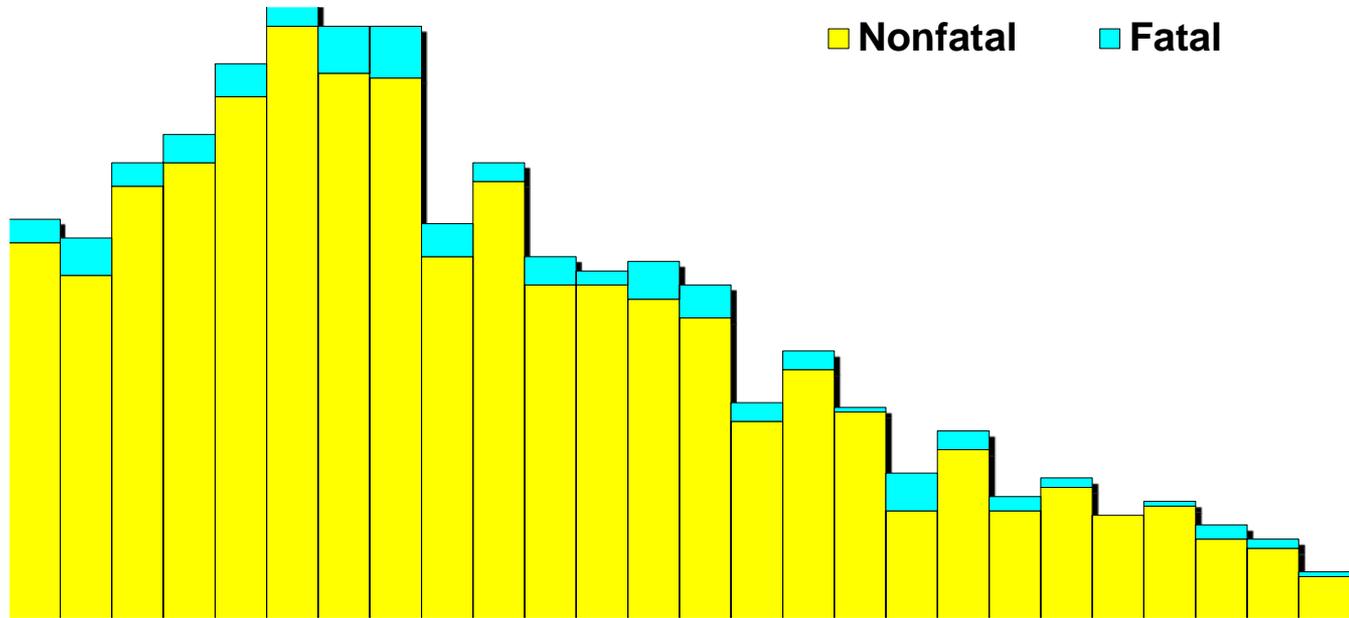
Meningococcal Disease Incidence, United States, 1970-2012



1970-1996 NNDSS data, 1997-2012 ABCs data estimated to U.S. population

Source: CDC Epidemiology and Prevention of Vaccine Preventable Diseases Webinar Series October 7, 2015

Reported cases of meningococcal disease Washington, 1990–2015 YTD (through 11/30)



Meningococcal Disease in Washington State – 2015 YTD

Onset	Age	Sex	Serogroup	Vaccine?	County	Notes (not for release)
01/16/15	27 years	M	W135	No	King	
01/17/15	63 years	F	C	No	Spokane	
02/03/15	33 years	M	B	No	Chelan	
02/18/15	23 years	M	Y	No	King	
02/27/15	26 years	M	B	No	Clark	Homeless no shelter
04/19/15	48 years	M	C	No	Lewis	
05/15/15	3 months	F	C	n/a	Lewis	
05/31/15	18 years	M	C	No	Benton	Hx etoh
07/21/15	5 months	F	B	n/a	Pierce	
08/16/15	66 years	F	C	Unknown	Thurston	