

College Immunization Requirements

Population Health Opportunity

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May 19, 2016

CDC on College Immunizations

College entrance physical examinations and routine visits provide opportunities for updating and administering immunizations.

2010 National College Health Assessment data

- Only 40% of college students report receiving influenza vaccinations
- Only 55% report receiving meningococcal vaccinations

Adequate pertussis immunization requires national emphasis.

American College Health Association

Committed to Immunizations

- Vaccine Preventable Diseases Advisory Committee
- Advisory Committee on Immunization Practices (ACIP) liaison

Regular updates:

- *Recommended Institutional Prematriculation Immunization Guidelines (“RIPI”)*
- *Sample Immunization Record*

http://www.acha.org/documents/resources/guidelines/ACHA_RIPI_April_2014.pdf

ACHA Guidelines

Recommendations for Institutional Prematriculation Immunizations

Immunizations offer safe and effective protection from vaccine-preventable diseases. The United States is experiencing re-emergence of these diseases, in part due to factors such as unimmunized and under-immunized persons and global travel. The American College Health Association (ACHA) strongly supports the use of vaccines to protect the health of our individual students and our campus communities. In recognition of the vital role that vaccine coverage plays in community immunity (herd immunity), ACHA discourages use of nonmedical exemptions to required vaccines.

This guidance is provided to facilitate implementation of a comprehensive institutional immunization policy. Best practices for institutions of higher education include following Recommendations for Institutional Prematriculation Immunizations (RIPI) guidelines, encouraging students who request nonmedical exemptions to required vaccines to be

counseled by a health service clinician, and considering exclusion of un-immunized students from school during outbreaks of vaccine-preventable diseases. Institutions may also be subject to additional requirements for prematriculation vaccinations and the granting of exemptions by state law

The ACHA Vaccine Preventable Diseases Advisory Committee updates this document in accordance with changing public health recommendations. These guidelines follow Advisory Committee on Immunization Practices (ACIP) recommendations published by the U.S. Centers for Disease Control and Prevention (CDC). Links to full information regarding ACIP provisional and final recommendations, including schedules, indications, precautions, and contraindications, are available at the CDC National Immunization Program website: <http://www.cdc.gov/vaccines/acip/index.htm>.

College Students: A Population at Risk

- Congregate living, campus housing
- Large classrooms and other public spaces
- Social and lifestyle choices
 - Alcohol and other substances
 - Sleep
 - Nutrition

Special Student Populations

- Health professions students
- Immunocompromised
- Foreign-born
- Travelers
- MSM

Adult Immunization

“Catch up” opportunity

- 2 MMR's
- Hepatitis B series
- Tdap booster
- HPV series
- Chickenpox
- Hepatitis A
- Pneumococcal*

*based on risk criteria

Quadrivalent Meningococcal Conjugate Vaccine (MenACWY)

Only ACIP vaccine recommendation that explicitly identifies college students

First year college students up through age 21 years who are living in residence halls should be vaccinated if they have not received a dose on or after their 16th birthday.

Missouri Legislation

- Requires meningococcal vaccine for students attending public universities if they live in campus housing
- Does not specify the meningococcal vaccine or timing
- Newest version allows only religious waivers

Currently NIS data show Missouri with a 60% vaccination rate for MCV4 vaccine 1 dose.

University of Missouri

Student Health Center monitors incoming students regarding meningococcal vaccine

Requires documentation of quadrivalent meningococcal vaccine at age 16 or later (typically booster)

If no dose during 11-12 years, single dose after age 16 meets requirement

Registration for next semester is blocked until documentation provided

2016-2017 Missouri Rule

Incoming 8th graders and 12th graders will be required to have the recommended MCV4 vaccination.

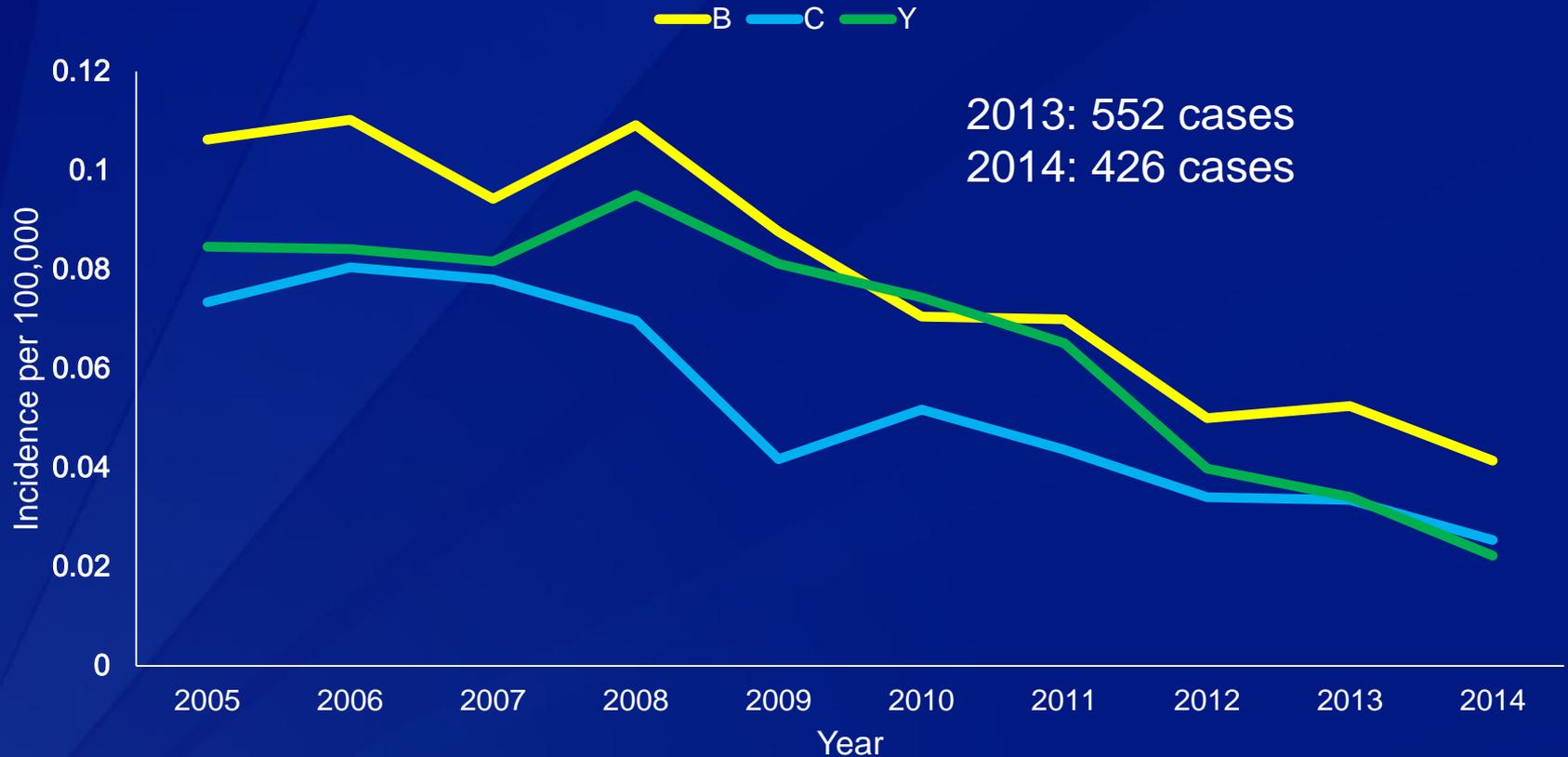
Frequently asked questions:

- Which vaccine is required?
- Why it is now required?
- What is the benefit of vaccination?

Epidemiology of Meningococcal Disease

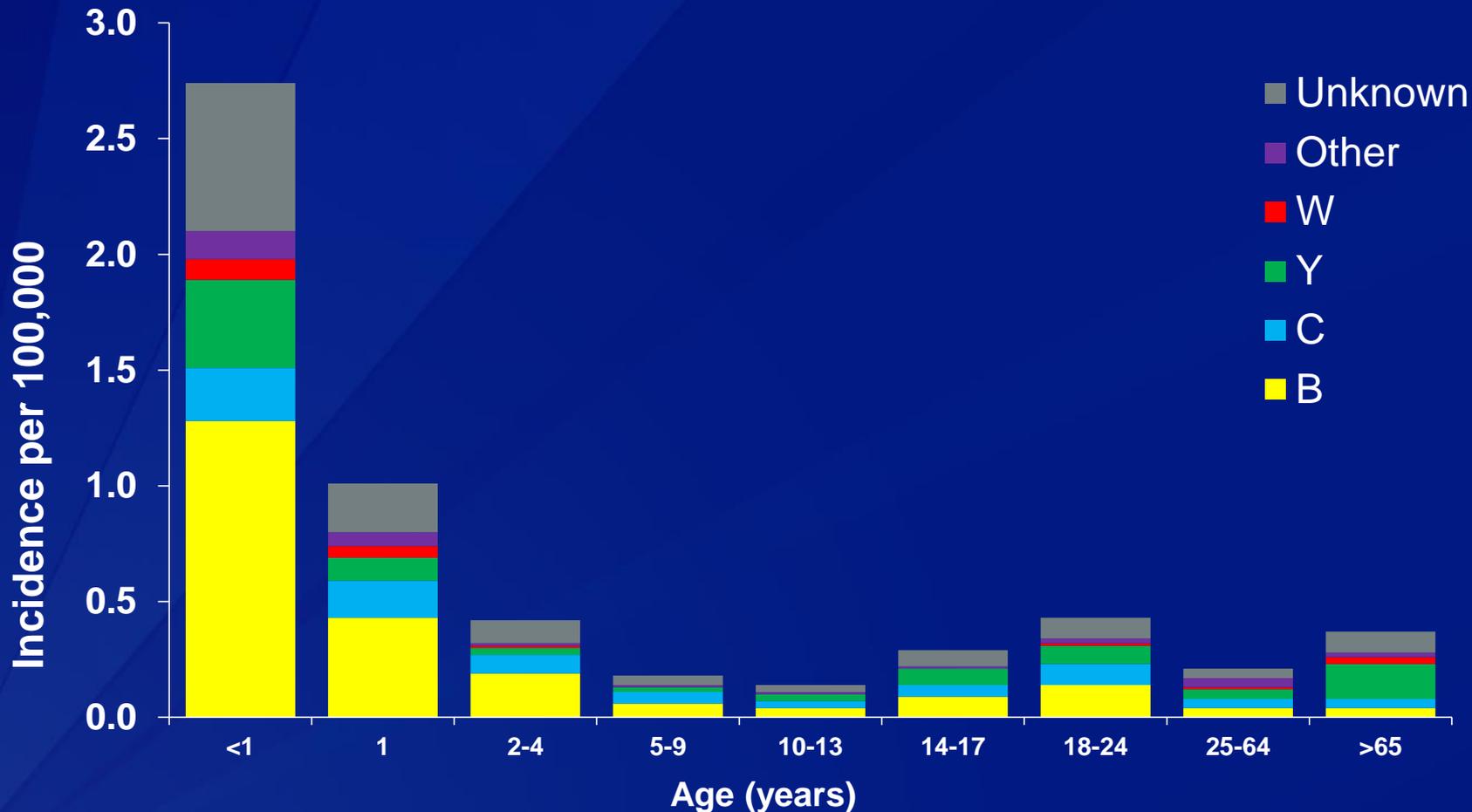
- Overall incidence in period 2005-2014
- Incidence by age and serogroup
- Incidence in adolescents and young adults by serogroup
- Average annual cases, deaths and serogroup B incidence

Meningococcal Incidence in All Ages by Serogroup, United States, 2005-2014

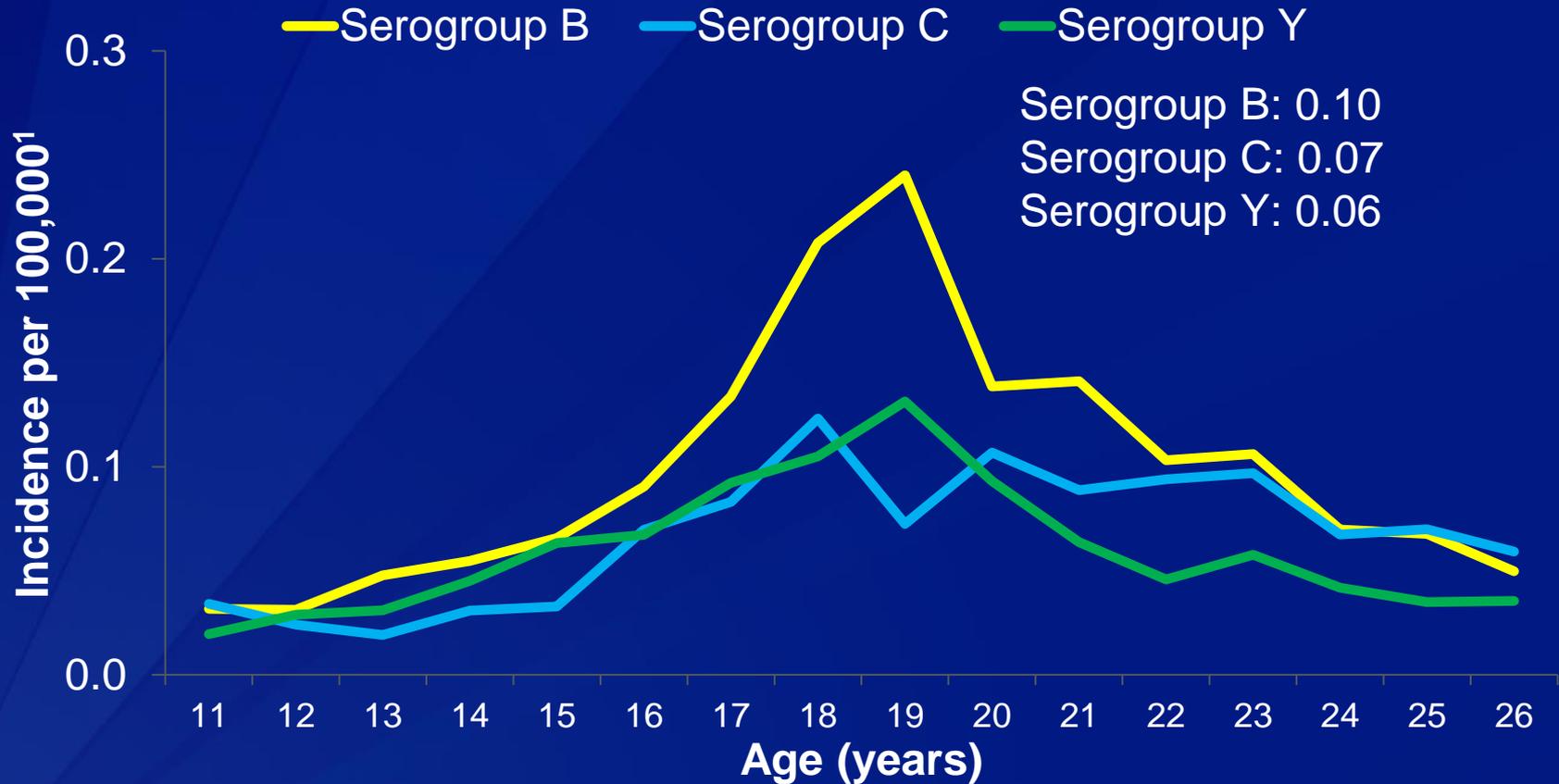


Source: National Notifiable Diseases Surveillance System (NNDSS) data with additional serogroup data from Active Bacterial Core surveillance (ABCs) and state health departments
Unknown serogroup (22%) and other serogroups (9%) excluded

Incidence of Meningococcal Disease by Age-Group and Serogroup, United States, 2005-2014



Meningococcal Incidence in Adolescents and Young Adults by Serogroup, 2005–2014



Source: National Notifiable Diseases Surveillance System (NNDSS) data with additional serogroup data from Active Bacterial Core surveillance (ABCs) and state health departments
Unknown serogroup (21%) and other serogroups (7%) excluded

Average Annual Cases, Deaths, and Incidence from Serogroup B, 2009–2013

	Cases ¹	Deaths ¹	Incidence per 100,000 ³
All 18–23 year olds	36	5	0.14
Estimated cases:			
College students ²	14	2	0.09
Non-college students ²	22	3	0.21

¹National Notifiable Diseases Surveillance System (NNDSS) data with additional serogroup data from Active Bacterial Core surveillance (ABCs) and state health departments

²40% of serogroup B cases in 18–23 year olds from ABCs were in college students (excluding unknown or missing), 2005–2013

³Assume 61% of persons age 18–23 years enrolled in college

Summary: Burden and Trends of Meningococcal Disease

Rates of meningococcal disease have been declining in the US since late 1990's

Currently at historic low –

2013 – 560 total cases

mid 1990s – 3,000 cases

Most disease caused by 3 serogroups – B,C and Y

2013 – sero B caused 150-200 of the 560 cases

55-65 cases of B disease occur in older children, adolescents and young adults (same as C+Y)

Meningococcal B Vaccines

Two newly licensed vaccines:

Bexsero (GSK) - 2 dose series

Trumemba (Pfizer) - 3 dose series

Recommendations:

Category A – High risk persons and outbreaks

Category B – for general use, allows individual clinical discretion

Category A vs B Recommendations

ACIP evaluates new data on vaccines and epidemiology to make well informed public health recommendations

Category A – “*SHOULD*”

for *all persons* in an age- or risk-factor-based group

Category B – “*MAY*”

to allow individual clinical decision making

High Risk for Meningococcal B Disease

- Serogroup B outbreak if part of identified at risk population
- Asplenia or functional asplenia, including sickle disease
- Complement deficiencies (inherited or chronic persistent)
 - C3, C5-9, properidin, factor H, factor D, eculizamab (Solaris)
- Laboratory workers

Campus Disease Outbreaks

-  **Meningitis**
- **Mumps**

Meningococcal Outbreaks

- 97% or more of meningococcal cases are *sporadic*
- 2-3% or less are *outbreaks*
- Outbreaks are more common in older children and adolescents
- Outbreaks on college campuses are very visible and have significant impact on those involved

Recent University Based Serogroup B Clusters/Outbreaks[†]

University	Outbreak Period	Number of cases
University 1	Feb – Mar 2009	4
University 2	Nov 2011	2
University 3	Jan 2008 – Nov 2010	13
University 4	Mar 2013 – Mar 2014	9
University 5	Nov 2013 – May 2015	5*
University 6	Jan – Feb 2015	2
University 7	Jan – May 2015	7

[†]Where CDC consulted

*1 additional associated case identified after retrospective case review

Use of Men B vaccines in Outbreaks

Pre-licensure – special IND through CDC

Princeton

UC-Santa Barbara

Post-licensure

University of Oregon

Providence College

UC-Santa Clara

Future of Meningitis B Recs?

Category A Recommendation unlikely without bridging these knowledge gaps:

- Duration of protection against invasive disease
- Affect on bacterial carriage
- Efficacy on any new B strains

Particularly challenging to get this data as incidence decreases

Clinical considerations: Meningitis B vaccine

Evaluate for high risk condition

Excellent safety profile

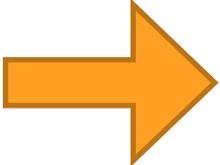
Good coverage for up to 2 years

Dosing recommendation for 3-dose
vaccine may be changed

Covered by insurance (ACA)

Campus Disease Outbreaks

- Meningitis

 Mumps

Mumps

2 MMR's prevent most but not all cases

Single dose of MMR– 78% effective

2 doses - 88% effective (recommended 1989)

2006 – recommendation for 2 dose MMR for school age children, college students, healthcare professionals and international travelers

Verification of immunity :

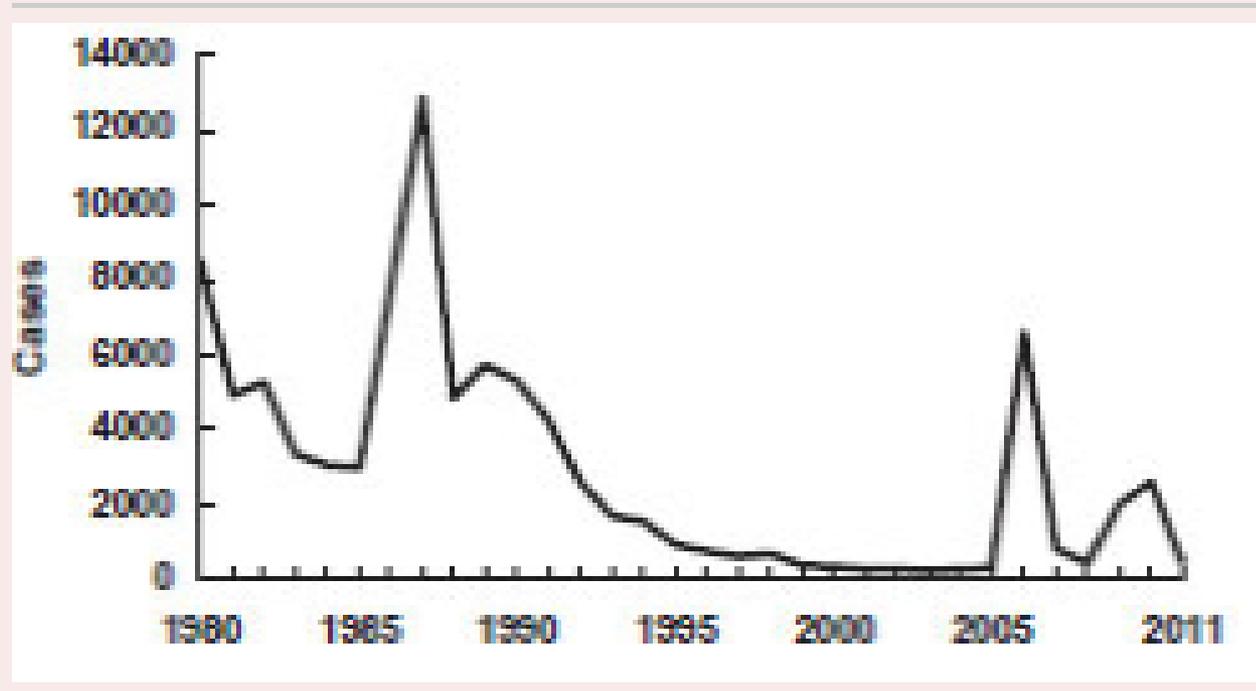
Born before 1957

Serologic evidence (IgG aby)

Lab confirmation of disease

Mumps

Mumps—United States, 1980-2011



Source: National Notifiable Disease Surveillance System, CDC

Mumps Outbreaks

Common factors

- Intense exposure in congregate settings
 - large urban households (religious community)
 - college and universities
- High level of *one and two dose vaccine coverage* helped limit outbreak
 - size
 - duration
 - spread

Number of mumps cases by year since 2010

Year	Cases
2010	2,612
2011	370
2012	229
2013	584
2014	1,151
2015*	422

*Cases as of September 18, 2015

Source: [Morbidity and Mortality Weekly Report \(MMWR\), Notifiable Diseases and Mortality Tables](#)

Mumps diagnosis

Diagnosis and confirmation of cases is challenging

- PCR
 - best, if positive - “confirmed case”
 - can be falsely negative
- Serology - helpful but can be confusing
 - IgM positive – “presumptive case”
- Symptoms (often mild with unilateral swelling)
 - “suspected case”

3rd MMR for Outbreaks

Consultation with MHSS and CDC
to help control outbreak
decrease attack rate

College summer breaks may also help
“break the thread”

Travel Immunizations

Large number of college students travel abroad for study and volunteer work

Opportunity to prevent travel-related diseases and to catch up on adult immunizations

<http://wwwnc.cdc.gov/travel/destinations/list>

Resources

<http://www.cdc.gov/meningococcal/vaccine-info.html>

<http://www.cdc.gov/mumps/outbreaks.html>

<http://wwwnc.cdc.gov/travel/destinations/list>

http://www.acha.org/documents/resources/guidelines/ACHA_RIPI_April_2014.pdf

Adolescent and Adult Vaccine Quiz,

- <http://www2.cdc.gov/nip/adultimmsched/>