Why get a meningitis B vaccine?
Ask the Stillman family of Michigan.

Emily Stillman died from a vaccine-preventable disease because the vaccine was not available to her. It is available to you.

Emily’s story

Emily Nicole Stillman was a beautiful 19 year old sophomore at Kalamazoo College in Kalamazoo, Michigan. She had her whole life ahead of her, with dreams of someday performing on Saturday Night Live. On the evening of January 31, 2011, Emily called home with a headache. Her mom thought she might have been coming down with the flu. Emily thought it was just lack of sleep. Thirty-six hours later, Emily lost her life to meningococcal disease serogroup B. Emily had received all of the vaccines recommended for her age group at the time, including the appropriate meningococcal vaccine to protect her against serogroups A, C, W and Y. However, in 2013, the serogroup B vaccine was not yet available in the United States. It is available now, so don’t delay protecting your adolescent and young adult with both meningococcal vaccines.

Meningococcal Disease

IT TAKES 2 TYPES OF MENINGOCOCCAL VACCINES

www.aimtoolkit.org
www.foreveremily.org

Michigan Department of Health & Human Services
FACES of Meningococcal Disease Specifically MenB
Meningococcal Disease Video

www.youtube.com/watch?v=7cuZwHk9vn0

Source: National Meningitis Association - Public Service Ad
Meningococcal disease is highly contagious.

False

Meningococcal disease is not highly contagious. Those most at risk for meningococcal infection are persons who are in close contact with a person who has meningococcal disease.
Meningococcal Disease

Image Courtesy of CDC
Meningococcal Disease Pathogenesis

• Transmitted by droplet aerosol or secretions from the nasopharynx of colonized persons

• Bacteria attach and multiply on the mucosal cells of the nasopharynx

• In some persons organism invades bloodstream and causes infection at a distant site

• In about 50% of bacteremic persons the organism crosses the blood-brain barrier
  • Goes into the cerebrospinal fluid and causes purulent meningitis
Meningococcal disease is an acute, potentially severe illness caused by the bacterium *Neisseria meningitidis*.

*Neisseria meningitidis* is a leading cause of bacterial meningitis and sepsis in the United States.

Almost all invasive disease is caused by one of five serogroups: A, B, C, W, and Y.
  - Three of these serogroups (B, C, and Y) cause most of the illness seen in the United States.

Source: CDC
Photomicrograph of *Neisseria meningitidis*
Clinical Features (*Neisseria meningitidis*)

- Incubation period 3 to 4 days (range 2 to 10 days)
- Abrupt onset of fever, meningeal symptoms, hypotension and rash
- Although not common, meningococcal disease is very serious
- Case-fatality rate is 10%-15%, even with appropriate antibiotic therapy
- Case-fatality is up to 40% in those with meningococcemia
- As many as 20% of survivors have permanent sequelae:
  - Hearing loss
  - Neurologic damage
  - Loss of a limb
More on Meningococcal Disease

• *Neisseria meningitidis* is not spread as easily as other disease-causing organisms such as the viruses that cause chickenpox and measles

• Those most at risk for meningococcal infection are persons who are in close contact with a person who has meningococcal disease

• Spread from person-to-person through respiratory secretions
Meningococcal Meningitis

• Most common presentation of invasive meningococcal disease
• Common symptoms are:
  • Sudden onset of fever
  • Headache
  • Stiff neck
  • Often accompanied by symptoms such as nausea, vomiting, photophobia, and altered mental status
Meningococcal Sepsis

• Also called “Meningococcemia” (bloodstream infection)
• May occur with or without meningitis
• Symptoms include:
  • Abrupt onset of fever
  • Petechial or purpuric rash
  • Hypotension
  • Shock
  • Acute adrenal hemorrhage
  • Multiorgan failure
Recap of Symptoms

- Remember it can attack without warning
- Early symptoms can often be mistaken for the flu
Meningococcal Disease Incidence

Relatively rare – in 2017, there were ~350 cases of meningococcal disease reported (all serogroups)

www.cdc.gov/meningococcal/surveillance/index.html
Meningococcal Disease is a Serious Illness

1 in 10 die despite antibiotics

1 in 5 survivors have long-term sequelae:

- Hearing Loss
- Amputations
- Cognitive Deficits
MenACWY and Men B Coverage

• Coverage for MenACWY according to MCIR data:
  • By age 13-17 years, 80.4% have received at least 1 dose
  • However, only 47.2% are fully protected by age 17 years*

• Coverage for MenB according to MCIR data**:
  • 26.2% of adolescents 16 through 18 years of age have received 1 or more doses
  • 17.8% of persons 16 through 23 years of age have received 1 or more doses

*Up-to-date with recommended number of doses.
**Coverage is calculated using data reported to the MCIR for the numerator and the 2018 US Census Estimates for the denominator.
Meningococcal B Vaccine Administration

• 192,970 persons 16 through 23 years of age (as of September 28, 2019) have received 278,863 meningococcal B vaccines  
  • 60.4% Bexsero  
  • 39.4% Trumenba  
  • 0.2% Unknown

• Facility type administering Men B and reporting the data to MCIR (based on MCIR Facility Type)  
  • 51.8% of the doses were reported by Pediatrics  
  • 32.9% Family Practices  
  • 10.2% Local Health Departments  
  • 1.0% School Based Health Clinic  
  • 0.8% College/University Clinic
How Do We Protect?

VACCINATE!

Image Courtesy of CDC
It Takes 2 Types of Meningitis Vaccines

What is routine for meningococcal vaccination?
BEST Protection

• Adolescents are one of our highest risk groups
  **adolescents share everything**

• Our best protection is to vaccinate with both meningococcal vaccines

  1. Meningococcal Conjugate (MenACWY or MCV4)
     • Trade names Menveo® and Menactra®
  2. Serogroup B Meningococcal (MenB)
     • Trade names Trumenba™ and Bexsero®

Image Courtesy of CDC
## Meningococcal Vaccines

### Meningococcal Serogroup ACWY Vaccines

- **MenACWY or MCV4**
  - Available since 2005-ACIP routine recommendations
  - In 2005-Routinely recommended at age 11-12 years
  - In 2010-Booster dose recommended at age 16 years

### Meningococcal Serogroup B Vaccines

- **MenB**
  - Available since late 2014-ACIP routine recommendations
  - In 2015-Routinely recommended for people at increased risk age ≥ 10 years
  - Later in 2015-“May be given” to healthy persons 16 through 23 years of age, preferred at 16-18 years

Source: MMWR 2013;62(RR-2):15; MMWR 2015;64:608-12
Meningococcal Conjugate Vaccine (MenACWY)

- Menveo or Menactra are the 2 vaccine options for MenACWY
- For best protection, **FOLLOW** the recommended schedule, ensure your patient receives 2 doses of a MenACWY vaccine
  - 1 dose at 11-12 years
  - **and**
  - 1 dose at 16 years
- Ensure first-year college students who live in residential housing, receive 1 dose of MenACWY, if not previously vaccinated at age 16 years or older

If needed the minimum interval between the 2 doses is 8 weeks
Meningococcal B Vaccines (MenB)

• Bexsero® or Trumenba™ are the 2 vaccine options for MenB

• Know your vaccine:
  • Bexsero is 2 doses at least 4 weeks apart
  • Trumenba is either 2 doses at 0, 6 months OR 3 doses at 0, 2, 6 months
    • 2-dose Trumenba schedule is recommended for persons aged 16 through 23 years who are not in any risk group or outbreak

• What is “routine” for MenB vaccines?
  • Based on clinical discretion, MenB may be given to persons aged 16 through 23 years who are not at increased risk
    • Providers need to discuss vaccination and risk of disease
    • Series preferably given at ages 16-18 years

**16-year-old platform**
Did you know?

May give MenB at the same time as MenACWY – Don’t miss an opportunity

- Both are recommended at 16 years of age
- Both are administered IM—ensure correct administration, deltoid preferred site

Avoid SIRVA!
(Shoulder Injury Related to Vaccine Administration)

Images Courtesy of CDC
High Risk Recommendations for Persons at Increased Risk for Meningococcal Disease

Know Your Resources!

Handout available at: www.immunize.org/handouts/meningococcal_acwy.asp

Handout available at: www.immunize.org/handouts/meningococcal_b.asp
Develop Your Office Immunization Culture

Setting up the 16-year-old platform
Why Do We Need a to Develop our Immunization Culture?

• FIRST and foremost, inconsistent messages from staff may confuse patients/parents and create mistrust

• Having a standard message in place shows your patients and families that:
  • You are committed to protecting all your patients through full coverage and on-time immunization

Remember:
• You are their most trusted source
• Confidence is increased when the same message is received from different people
The Office Culture

• Building a pro-vaccine culture in your office starts with
  • The front desk
  • Reaches every exam room
  • Touches every area of your office (all the way to the back of the office)
Creating Your Office Immunization Culture

• Have an office Immunization Champion
• State your immunization philosophy and let your patients and parents know
• Give a strong provider recommendation and assess at every visit to avoid a missed opportunity
• Talk about vaccines and welcome questions
• Schedule follow-up immunization appointments before the patient leaves the office
• ALWAYS remind patients and parents/guardians about upcoming immunization appointments and contact those who miss appointments

Handout available at: www.give2menacwy.org/pdfs/immunization-culture.pdf
How Do We Get Vaccine Into Arms?

Follow the Standard of Care

RECOMMEND, EDUCATE, STRONG RECOMMENDATION, AND GIVE THE VACCINES

DO NOT MISS AN OPPORTUNITY!
Establish an Immunization Platform for Your Office

- The 16-year-old immunization platform
- The 11 to 12-year-old immunization platform

Teens on a diving platform in France. (Photo: alainwibert/Flickr)
An Adolescent Immunization Platform

• Ensures your patients receive all their recommended vaccines
  • And if not done earlier, catch them up on any vaccines they may have missed

• Using the 16-year-old platform (and the 11 to 12-year-old platform)
  • Provides opportunities to review and complete all the recommended vaccines
    while the patients are still covered by public or private insurance
  • Following the ACIP immunization schedule will help families adhere to it

• Establish a 16-year-old visit in your office to make sure these patients receive
  the vaccines they need

• Develop strategies to improve adolescent vaccination rates in your healthcare
  setting

Source: Auslander B et al. J Adolescent Health 2017;60:475-6
In 2017, the official U.S. immunization schedule implemented a stand-alone column for age 16 years

To highlight the need for the recommended MenACWY 2nd dose at age 16 years

Along with MenACWY at age 16, influenza vaccine (seasonally) is recommended and MenB is recommended based on individual clinical decision making

A focus on 16-years allows for catch-up on vaccine doses
The Adolescent Immunization Platform

<table>
<thead>
<tr>
<th>11 to 12-year-old Immunization Platform</th>
<th>16-year-old immunization platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Tdap—once in lifetime dose</td>
<td>• Flu—1 dose every year</td>
</tr>
<tr>
<td>• HPV—if the series is started at 9 through 14 years it will be a 2-dose series given at 0, 6 months</td>
<td>• MenACWY (dose 2)—2nd dose is recommended at 16 to 18 years</td>
</tr>
<tr>
<td>• Flu—1 dose every year</td>
<td>• MenB—preferred at 16 to 18 years, 1st dose in series</td>
</tr>
<tr>
<td>• MenACWY (dose 1)—recommended at age 11 to 12 years</td>
<td>• Number of doses depends on Vaccine brand being used</td>
</tr>
</tbody>
</table>

~Assess for any vaccines that may need to be caught up on~
Updated Handout!

• Just received an email on Wednesday October 19, 2019 that this handout was updated:
  • Reviews what vaccines are recommended at 16
  • Gives a reminder on making sure you are up-to-date on all your vaccines
  • Follows the 16-year-old Immunization Platform

Handout available at: www.immunize.org/handouts/adolescent-vaccination.asp
Meningococcal Vaccine Administration Question

Question:
• Given how important the MenACWY booster dose is for protection of older adolescents, should I also administer MenB vaccine to 16-year-old patients at the same time?

Answer:
• MenB vaccine may be administered based on shared clinical decision making
• Clinicians may administer MenB vaccine any time between 16–23 years of age
• ACIP states a preference of 16–18 years of age
Discussing Meningococcal Vaccination

• Talking points for Meningococcal vaccination:
  • Meningococcal disease is rare but can be deadly
  • Increased risk from mid-to-late teens into your early 20s
  • Meningococcal disease can be sudden, without warning
  • 10%–15% of people who develop meningococcal disease will die, even with appropriate antibiotic treatment
  • Up to 20% of people who survive will suffer lifelong disability, such as loss of limbs, loss of hearing, or brain damage
  • Meningococcal vaccines are safe, effective, and recommended for adolescents
  • Close the conversation with a strong recommendation for the vaccine—It will make a difference

Handout available at: www.give2menacwy.org/pdfs/recommending-menacwy.pdf
Why Do We Vaccinate?

Why do we do all this?
Why do we create an office culture, establish an immunization champion, start the 16-year-old immunization platform, and create an office immunization philosophy?

BECAUSE............
Survivors of Meningococcal Disease
Specifically MenB
Video—It is the Right Thing to Do

Source: National Meningitis Association
Thank you for all that you do!

MY BABY BROTHER. HE WAS ONE OF THE LUCKY ONES! A MENINGITIS SURVIVOR.

MENINGITIS IN 7TH GRADE (1990)

4 KIDS IN OUR SURROUNDING COMMUNITY CONTRACTED MENINGITIS AROUND THE SAME TIME (2 LIVED AND 2 PASSED AWAY)
Resources

• ACIP’s Meningococcal Recommendations: [www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/mening.html](http://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/mening.html)

• CDC’s Meningococcal Infection: [www.cdc.gov/meningococcal/index.html](http://www.cdc.gov/meningococcal/index.html)

• Children’s Hospital of Philadelphia Vaccine Education Center Meningococcal: [www.chop.edu/centers-programs/vaccine-education-center/vaccinedetails/meningococcal-vaccine](http://www.chop.edu/centers-programs/vaccine-education-center/vaccinedetails/meningococcal-vaccine)

• Immunization Action Coalition: [www.immunize.org](http://www.immunize.org)

• Michigan Immunization Program: [www.michigan.gov/vaccines](http://www.michigan.gov/vaccines)

• Web pages that give a parent perspective:
  • [meningitisbactionproject.org/about-meningitis](http://meningitisbactionproject.org/about-meningitis)
  • [www.meningitis-angels.org/](http://www.meningitis-angels.org/)

• National Meningitis Association: [www.nmaus.org/educational-resources/psas/](http://www.nmaus.org/educational-resources/psas/)