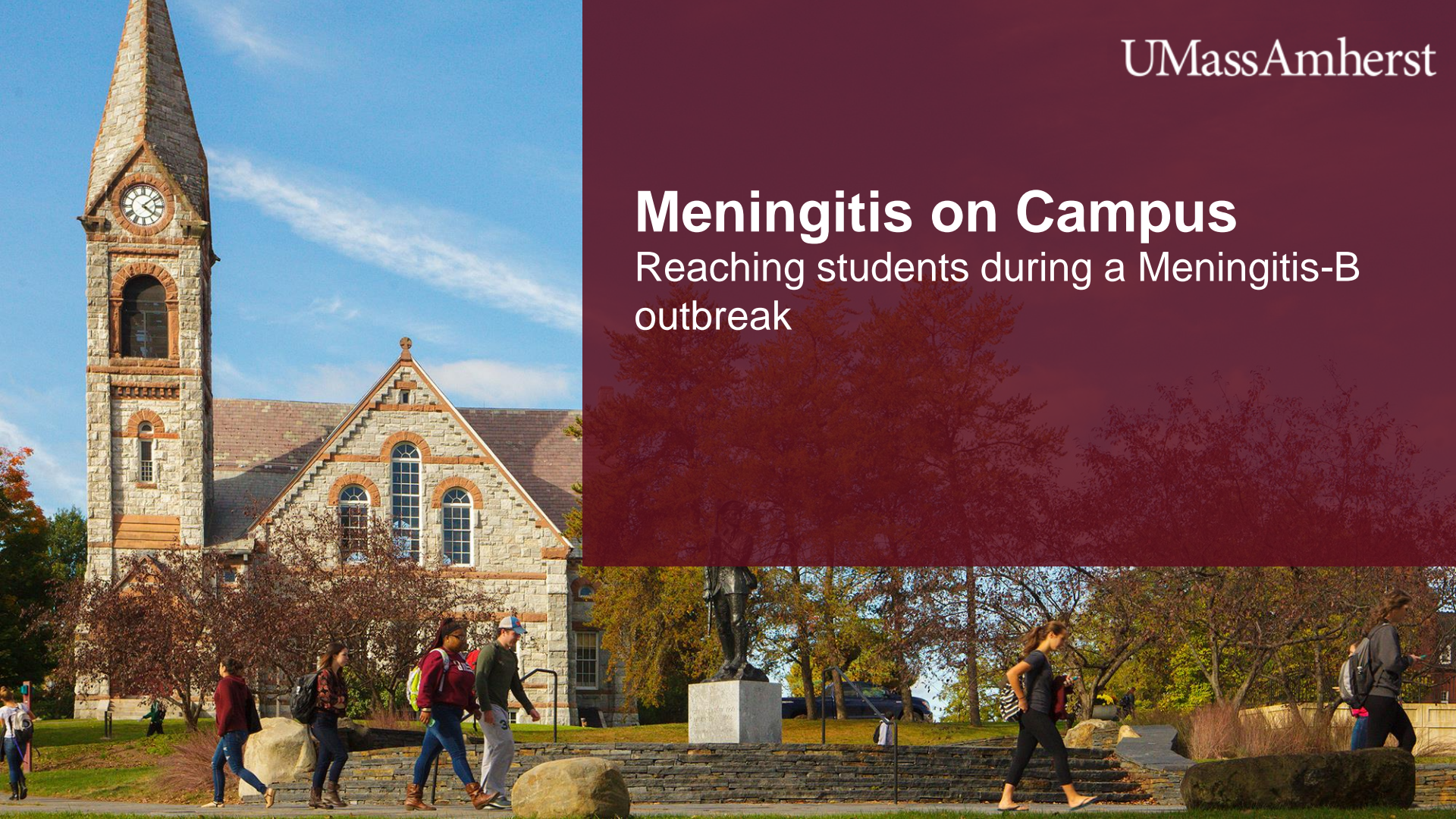


Meningitis on Campus

Reaching students during a Meningitis-B outbreak



**23,300 Undergraduate Students,
6,900 Graduate Students,
1,300 Faculty, and 5,000 Staff**

**13,000 students reside on campus
(*Southwest Residential Area houses
approximately 6,000 of those students*)**



Meningococcal Disease

- Meningococcal disease is a rare bacterial infection that typically manifests as meningitis (infection of the membranes surrounding the brain and spinal cord) and/or septicemia (bloodstream infection).
 - The bacteria *Neisseria meningitidis* are the cause of meningococcal disease – most disease are caused by strains: A, B,C, W, Y .
 - Carrier State: 10% - 40% of 16 to 24 year olds carry the bacteria (increases in close living situations)
 - It is a very rare disease but can progress rapidly

University Based Serogroup B Clusters/Outbreaks[†], 2008–2017

State of University	Cases (deaths)	Outbreak Period	# Undergraduates
Ohio	13 (1)	Jan 2008 – Nov 2010	24,000
Pennsylvania	4	Feb – Mar 2009	10,000
Pennsylvania	2	Nov 2011	5,000
New Jersey	9 (1)	Mar 2013 – Mar 2014	5,000
California	4*	Nov 2013	18,000
Rhode Island	2	Jan – Feb 2015	4,000
Oregon	7 (1)	Jan – May 2015	20,000
California	2**	Jan – Feb 2016	5,000
New Jersey	2	Mar – Apr 2016	35,000
Wisconsin	3	Oct 2016	30,000
Oregon	5	Nov 2016 – Nov 2017	25,000
Massachusetts	2	Oct – Nov 2017	20,000

[†]Where CDC consulted; *1 additional associated case identified after retrospective case review; **1 additional patient with inconclusive laboratory results



Men B Risks on college campus

- In Massachusetts Meningitis B vaccine is not required prior to entry into schools
 - very few students at UMass had been vaccinated – prior to this past fall
- Close-contact – residential students at a higher risk
- Lifestyle and social choices –
 - stress
 - poor sleep
 - Spread through direct contact with secretions - sharing of secretions can be routine – large parties, e-cigarettes, sharing food/drinks

Fall semester at UMass

- First Case:
 - Student presented at University Health Services on October 24, with flu-like symptoms and difficulty walking. – purpuric rash noted to lower extremities
 - Determined to have possible meningococcal disease:
 - IV started – blood cultures drawn
 - administered 2 grams ceftriaxone and transferred to closest hospital
 - Local hospital did CT scan & labs – the patient was in DIC and was transferred to level 3 trauma center where he was intubated in the ED
 - MDPH notified immediately of case

**Clinical Pearl: UHS had drilled on emergency procedures for Meningitis*

Public Health Response: Case #1

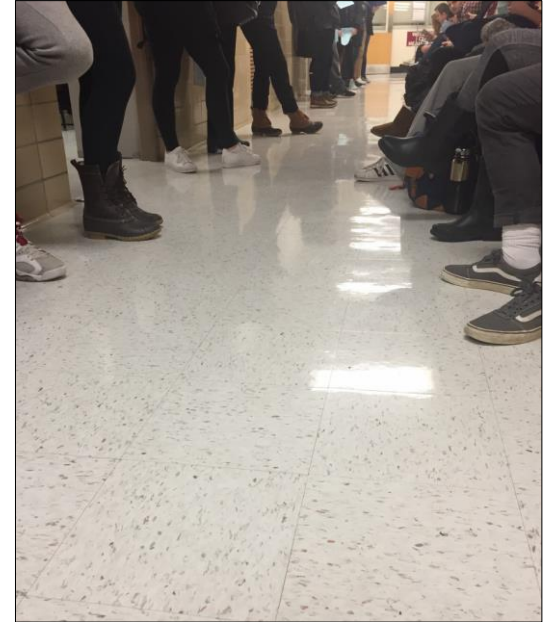
- Identified “close contacts” of the patient through interviews with roommate & close friends – same day
- Met with campus emergency operations committee EOC – next morning
- Targeted risk communications (email, word of mouth, attended a meeting) to fraternity who hosted party – within 24 hours – All campus community email followed shortly afterwards
- 105 individuals received PEP – liberal administration due to unknown contact at party
- Initiated an educational campaign on campus: healthy living habits, symptoms
- Environmental Health cleaned residence hall/room

Second Case: 3 weeks later

- Was brought to an emergency room near home by family on November 12th
- His mother had recognized symptoms from the emails that went to parents from campus
- Outreach was done for prophylaxis for close contacts and further campus education - ~55 people received PEP
- No correlation or social connections existed between the two cases
- *Practice Pearl: All campus communications alerted family of symptoms and need to go to hospital ASAP*

Initial campus response

- Planning Team
 - Representatives of the EOC Team for clinical support.
 - UHS, EHS, EM, News and Media, External Relations, Chancellor's Office, A&F, Provost Office
 - Decision was made to begin offering “scheduled” vaccines at UHS for Meningitis-B
 - Consulted with MDPH early on and throughout and received support for the current plan, under the current circumstances



Initial Campus Response

- Response and campus support
- Emergency call center – staffed by RN's from UHS
- Staffing for initial internal clinics – UMass MRC students from the College of Nursing
- Vaccine supply and storage
- Logistical support

Planning Pearl: Well established relationships as well as training & drills allowed for rapid response in terms of logistics, staffing, vaccine management

Thanksgiving Break

- Parental direction
 - With Thanksgiving break at hand, information about the two cases was shared with Healthcare providers around the state and that UMass students were told one option for the vaccine is while at home.
- CDC Testing
- CDC had done further testing and determined that the two cases were identical at the genome level. Isolates identified as serogroup B. Whole genome sequencing (WGS):
 - Isolates closely related and belong to a **hyper-invasive lineage**
- MDPH & CDC agreed that even with only two cases they consider this an **outbreak**

Announcement of Outbreak

- Preparations before announcement
 - JIC/JIS Plan – scheduled space for media arrival
 - Staffing estimates for clinic
 - Logistics and supplies
 - Vaccine quantities and storage
 - Information technology
 - Planning outreach efforts

UMassAmherst

UNIVERSITY HEALTH SERVICES

Dear Campus Community,

Following additional, extensive testing of the two student cases of meningococcal disease on campus, University Health Services (UHS), in concert with the Massachusetts Department of Public Health and the federal Centers for Disease Control and Prevention (CDC), has determined that because the two cases originated from a single strain of genetically identical organisms, this meningococcal disease should be considered an outbreak. The CDC conducted the testing.

As a result, University Health Services is recommending that students at the highest risk receive serogroup B vaccinations at a series of four walk-in clinics during the next two weeks. Those at the highest risk include: all undergraduates, graduate students living in undergraduate housing, and all students with conditions such as asplenia, a complement deficiency, sickle cell anemia or those taking the medication Solaris. This includes both on-campus and off-campus students.

CDC protocols do not consider faculty and staff to be within this risk group, except for those with the conditions listed above. Faculty and staff who are concerned about exposure to meningitis or are interested in being vaccinated are encouraged to contact their primary care provider.

Updates, frequently asked questions and details about insurance will be posted at www.umass.edu/meningitis.

These further measures to protect the campus community reinforce decisions made by the university to begin vaccinating over the past two weeks. Meningococcal B vaccine has been administered by appointment to more than 1,400 students so far, but additional action to reduce risk is best accomplished through large walk-in clinics. We will need your utmost cooperation and attendance to protect you from this preventable, serious illness. Meanwhile, the campus will safely maintain regular operations. There are no plans to interrupt any classes, attendance or housing at UMass due to Meningococcus B.

Communication

- Students and Campus
- Parents
- Outside media interest

~~~~~

- \*Healthy Living information\* as well as information on vaccines

UMassAmherst UNIVERSITY HEALTH SERVICES

Dear Campus Community,

University Health Services (UHS) is writing to advise you of an important announcement regarding meningococcal disease on campus.

As we conveyed to you last month, a student was diagnosed with meningitis on October 24, 2017, and that case is now confirmed as a serogroup B case. The student is in stable condition. A second case of bacterial meningitis was reported over the weekend in a student who lives in a residence hall. This student is in stable condition and is being treated at a local hospital. The serotype of this case is not yet determined. UHS is currently working to identify people who may have been in close contact with the student and have a higher risk of infection. They are being provided safe and effective antibiotic prophylaxis to reduce the possibility of infection.

Because these two students were not in close contact with each other, our level of concern. UHS is working in consultation with federal and state health officials, and will be updating advice as more information becomes available.

The serogroup B strain is not covered by the meningitis vaccine required for college attendance, which does cover strains A, C, Y and W. Therefore, as a precaution, you may want to receive the Serogroup B vaccine, which is available at UMassAmherst. You can also locate a nearby facility that offers it by visiting <https://www.mass.gov/info-details/serogroup-b-meningitis-vaccine>. The vaccine may also be available through your local health care provider during the upcoming Thanksgiving holiday break. As with all vaccines, protection is not immediate and should be thought of as a wise precaution for this winter and for several years to come.

UHS continues to advise the campus community to take health smart precautions. Don't swap saliva. Avoid sharing food, drinks and personal items that contact saliva, including drinks from punch bowls. Wash hands with soap and water or hand sanitizer. Cover coughs and sneezes with a tissue or your sleeve. Don't touch your eyes, nose, or mouth—germs spread easily this way. If you are sick, have fever, or other concerns, University Health Services is here to help you.

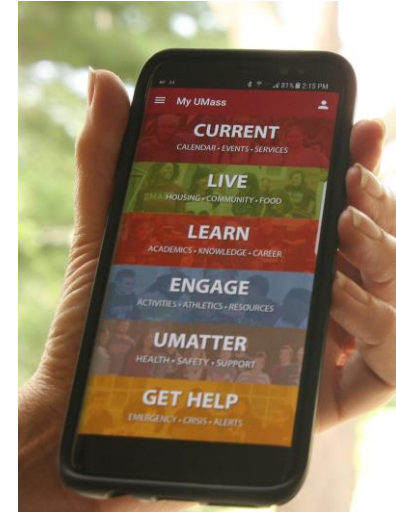


# Reaching Students Challenges & Opportunities



# Reaching Students in 2018

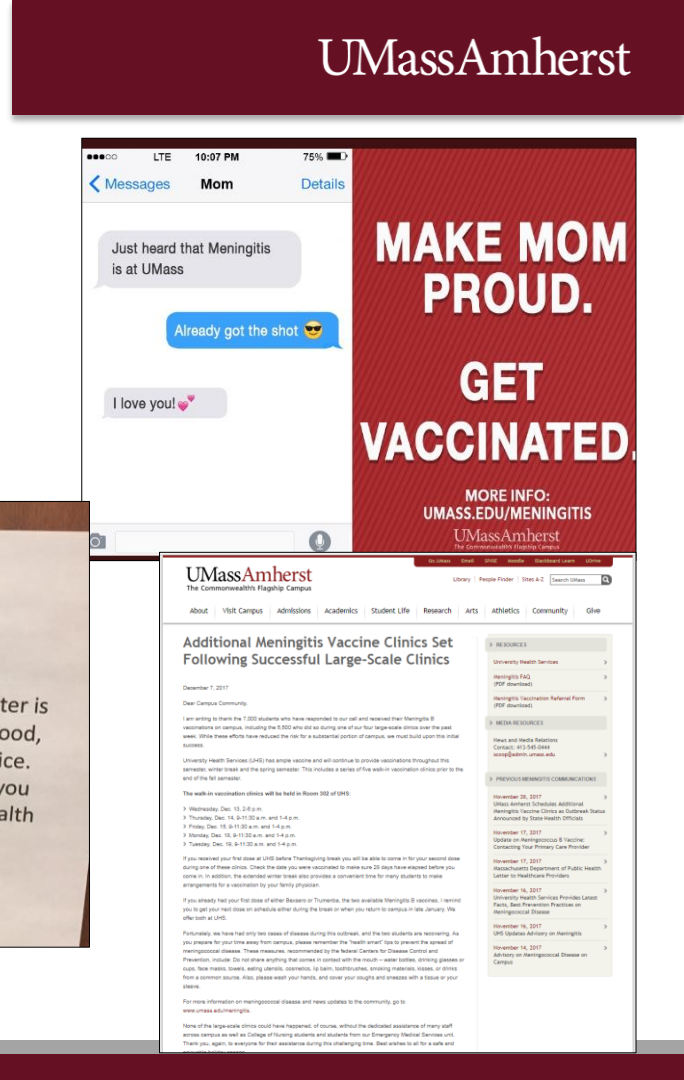
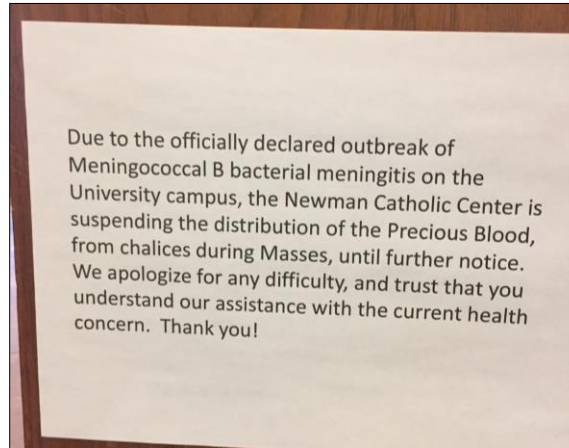
- Opportunities:
  - UMass All Student/Staff/Faculty/Parent\* Emails
  - Social Media
  - Digital Display Signs in Campus Buildings
- Challenges:
  - Competing Priorities
  - Competing messaging
  - Risk Perception
  - Rapid News Cycle
  - Vaccine side effects via word of mouth from those who had many side effects





# Communications

- Social Media and E-Mail
- Web Resources
- Dedicated meningitis webpage
- Dedicated stripe on umass.edu
- Parents
- Low Tech / Face-to-Face
- “Out-of-the-Box” (Party Registration)





The Commonwealth of Massachusetts  
Executive Office of Health and Human Services  
Department of Public Health  
Bureau of Infectious Disease and Laboratory Sciences  
305 South Street, Jamaica Plain, MA 02130

CHARLES D. BAKER  
Governor  
KARYN E. POLITO  
Lieutenant Governor

Division of Epidemiology and Immunization  
Tel: (617) 983-6800  
Fax: (617) 983-6840  
[www.mass.gov/dph/epi](http://www.mass.gov/dph/epi)  
[www.mass.gov/dph/imm](http://www.mass.gov/dph/imm)

MARYLOU SUDDERS  
Secretary  
MONICA BHAREL, MD, MPH  
Commissioner  
Tel: 617-624-6000  
[www.mass.gov/dph](http://www.mass.gov/dph)

November 30, 2017

TO: Healthcare Providers in Massachusetts

FROM: Alfred DeMaria, Jr., MD  
Medical Director and State Epidemiologist  
Bureau of Infectious Disease and Laboratory Sciences

RE: Update: Invasive Meningococcal Cases at the University of Massachusetts (UMass) Amherst

New!

Two students at UMass Amherst have been diagnosed with invasive meningococcal disease serogroup B within the past several weeks. An [update](#) describing planned vaccination clinics at UMass Amherst was issued on 11/28/2017. This is an update to the MDPH advisory of November 16, 2017. There have been no additional cases to date.

New!

Following discussions with UMass and the CDC, and informed by the results of whole genome sequencing which demonstrated that the isolates from the two patients are indistinguishable, the cases at UMass are now considered an outbreak. At the current time, serogroup B meningococcal vaccine (MenB) is now highly recommended for the following groups at UMass Amherst:

- All undergraduate students;
- Students living in undergraduate housing, and
- Persons with medical conditions that place them at high risk for invasive disease (asplenia, sickle cell disease, complement deficiencies, microbiologists routinely working with isolates, and those taking the medication eculizumab [Soliris]).

State-supplied MenB vaccine may be used for students under the age of 19.

ACTIONS REQUESTED OF ALL CLINICIANS:

1. Be alert for cases compatible with meningococcal disease (see below) in UMass Amherst students and their close contacts. Prompt recognition and antibiotic treatment of meningococcal disease is critical.
2. Immediately report all suspect cases of meningococcal disease to the MDPH at (617) 983-6800 (Suspect cases in Boston should be reported to the Boston Public Health Commission at (617) 534-5611). Do not wait for laboratory confirmation to report a clinically suspected case.
3. Obtain blood and CSF cultures prior to administration of antibiotics, if possible, to enhance detection of *N. meningitidis*.

MDPH Meningitis Advisory Update

November 30, 2017

1

4. Consider vaccinating the UMass Amherst students with meningococcal B vaccines (MenB) vaccine for short-term protection against group B meningococcal disease.

MDPH Meningitis Alert

November 16, 2017

(See next page)

1

# MDPH Advisories to Massachusetts Healthcare Providers November 16 & 30 2017

## Massachusetts

Executive Office of Health and Human Services  
Department of Public Health  
Bureau of Infectious Disease and Laboratory Sciences  
Jamaica Plain, MA 02130

Division of Epidemiology and Immunization

NO  
NO  
[epi](http://www.mass.gov/dph/epi)  
[imm](http://www.mass.gov/dph/imm)

MARYLOU SUDDERS  
Secretary  
MONICA BHAREL, MD, MPH  
Commissioner  
Tel: 617-624-6000  
[www.mass.gov/dph](http://www.mass.gov/dph)

November 16, 2017

Division of Epidemiology and Immunization

University of Massachusetts (UMass) Amherst  
Two students at UMass Amherst have been diagnosed with invasive meningococcal disease (IMD) within the past several weeks. An [update](#) describing planned vaccination clinics at UMass Amherst was issued on 11/28/2017. This is an update to the MDPH advisory of November 16, 2017. There have been no additional cases to date.

Following discussions with UMass and the CDC, and informed by the results of whole genome sequencing which demonstrated that the isolates from the two patients are indistinguishable, the cases at UMass are now considered an outbreak. At the current time, serogroup B meningococcal vaccine (MenB) is now highly recommended for the following groups at UMass Amherst:

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3. Obtain blood and CSF cultures prior to administration of antibiotics, if possible, to enhance detection of *N. meningitidis*.

4. Consider vaccinating the UMass Amherst students with meningococcal B vaccines (MenB) vaccine for short-term protection against group B meningococcal disease.





**UMass Amherst** @U... · 12h ✓  
 Approx. 1,500 UMass Amherst students received meningitis B vaccinations at today's walk-in clinic. Didn't get yours? Come to the Student Union tomorrow noon to 6pm. Info: [umass.edu/meningitis](http://umass.edu/meningitis)



2 17

Verizon 11:45 AM facebook.com

**UMass Amherst EMS** 57 mins ·

Final day to get your Meningitis-B vaccine in the Student Union! Happening from 12-6pm today and your longest wait time is filling out the form. And you get to see these friendly UMEMS faces!!

Be on the lookout for followup clinics at UHS after break for the second dose of the vaccination.



**UMass Amherst** @UM... · 4h ✓  
 Medical personnel briefing by UHS public health nurse Ann Becker just before doors open at noon today for Walk-in Meningitis Vaccine Clinic. Meningococcal serogroup B vaccinations are strongly recommended for all UMass undergrads and others at hisk risk [umass.edu/meningitis](http://umass.edu/meningitis)



4 11

**MENINGITIS DOESN'T TAKE A HOLIDAY.**

**GET VACCINATED.**

MORE INFO: [UMASS.EDU/MENINGITIS](http://UMASS.EDU/MENINGITIS)

**UMass Amherst** @UMa... · 10h ✓  
 Meningitis doesn't take time off for holiday prep. University Health Services recommends that all undergrads get a Meningitis B va...

1 8

**UMass Amherst** Sponsored ·

UMass Amherst Parents! Meningitis B is serious but preventable. Call your son or daughter today and tell them to get vaccinated on campus, Monday, Dec. 4 and Tuesday, Dec. 5! Get more information below.

**Tell Your Student to Get the Meningitis B Vaccine!** [Learn More](#)

[umass.edu](http://umass.edu)

Ann Becker and 40 others  
 11 Comments 16 Shares

Like Comment Share

# Communicate, Communicate, Communicate



**UMass Amherst** @U... · 12h  
Approx. 1,500 UMass Amherst students received meningitis B vaccinations at today's walk-in clinic. Didn't get yours? Come to the Student Union tomorrow noon to 6pm. Info: [umass.edu/meningitis](https://umass.edu/meningitis)



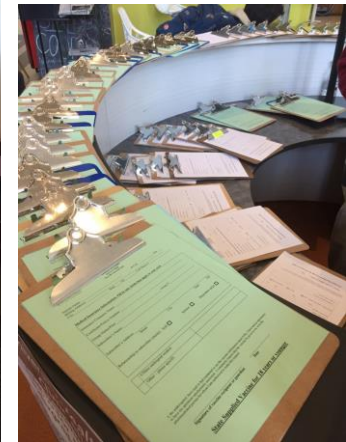
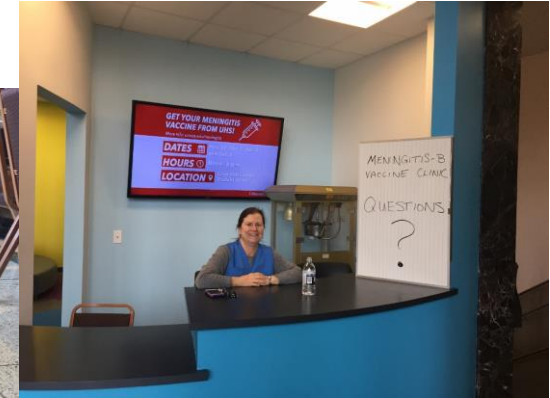
# Decreasing Barriers to Vaccination

- University agreed to cover all co-pays & deductibles so there were no out-of-pocket costs to students (expensive vaccine)
- Clinics were located in the center of campus
- All Walk-In
- All were 12pm – 6pm
- Scheduled on 4 consecutive days to accommodate varying students class schedules

*\*College Practice Pearl: No Classes were cancelled and clinics were held to accommodate Tue/Thur or Mon/Wed class schedules*

# Emergency Dispensing Site

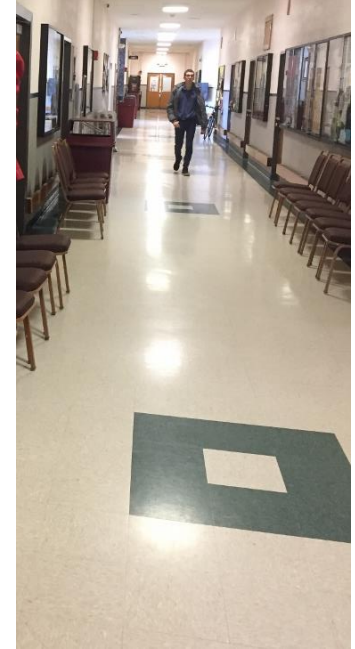
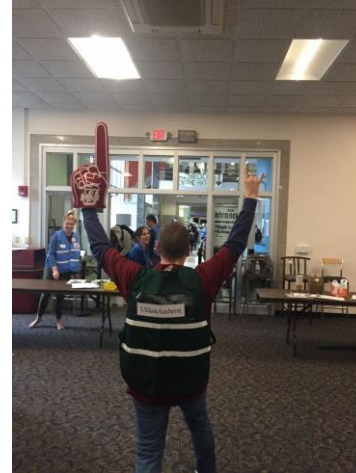
- Pre-Registration
- Registration
- Screening / Consultation





# Clinic

- Vaccine Room
- Post-vaccine
- Daily Fine-tuning



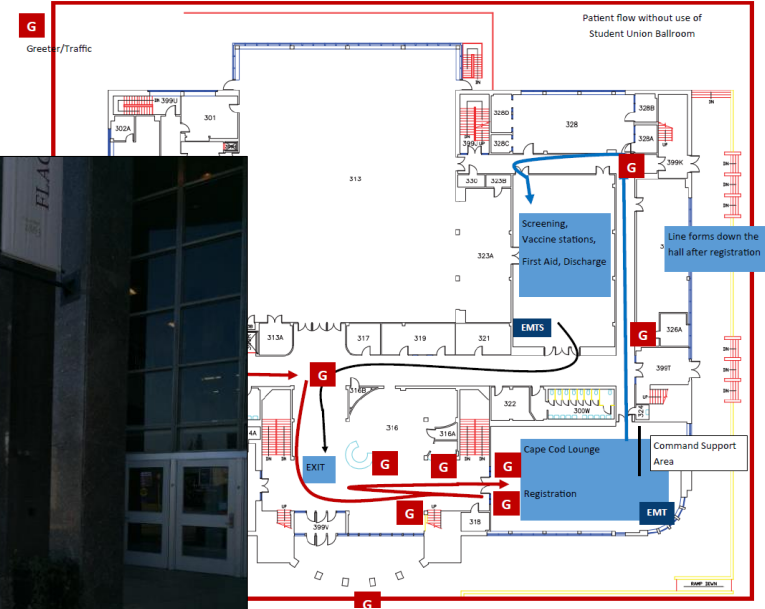


# Clinic

- Through-put
  - Planned for 600 per hour, 3,600 per day.
  - Reached 1,500 per day with a peak of 400 per hour
  - At opening experienced longest wait-time (20 minutes)
  - Average wait time from entry to exit was 10 minutes (Shortest sample was 6 minutes)

# Clinic Operation Partners

- Health Services
- EH&S
- Emergency Management
- Information Technology
- Telecommunications
- MRC - College of Nursing
- Medical Reserve Corps RSO
- UMass EMS
- Auxiliary Services
- Facilities

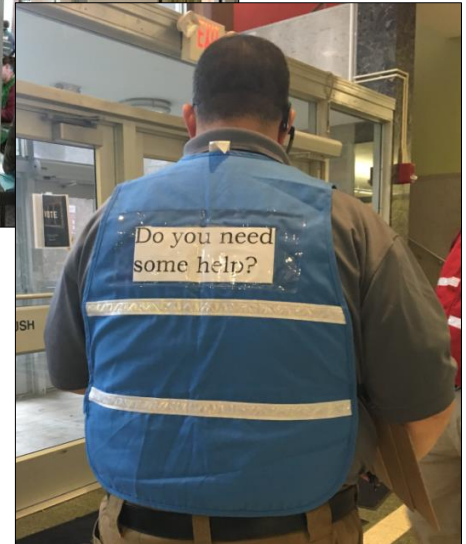
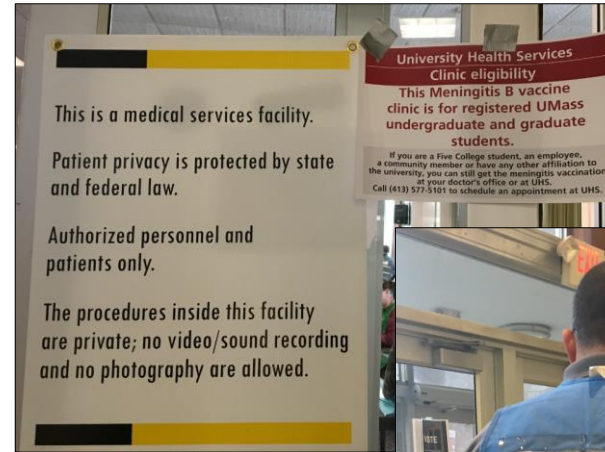


## Off campus support

- MDPH
- WRHSAC
- Hampshire Public Health Coalition
- Hampshire MRC
- MEMA

# Clinic Staff

- Briefings
  - Daily for Clinic staff
  - End-day for EOC Team
- Students
  - Nursing Students, EMTs, Interns, MRC, other student volunteers
- Staff
  - UHS, College of Nursing, EHS, IT, Facilities, Telecom, Catering, Hazwaste Contractor (sharps disposal)



# It takes a *prepared* village



## Third Case.....@ Smith College

- February 25<sup>th</sup> – 3 months later...
- Determined to be Men B
- Some social connections – unclear if definitively tied to UMass but possible..
- More Communications, message fatigue? Direct messaging to dose #1
- Five College Outbreak...





## How Many - Where do we stand now?

- Over 11,300 doses of vaccine administered by UHS
- 3,016 students who received 2 doses (6,032) from University Health Services
- 4,834 we have record of dose #1 from UHS

### Challenge:

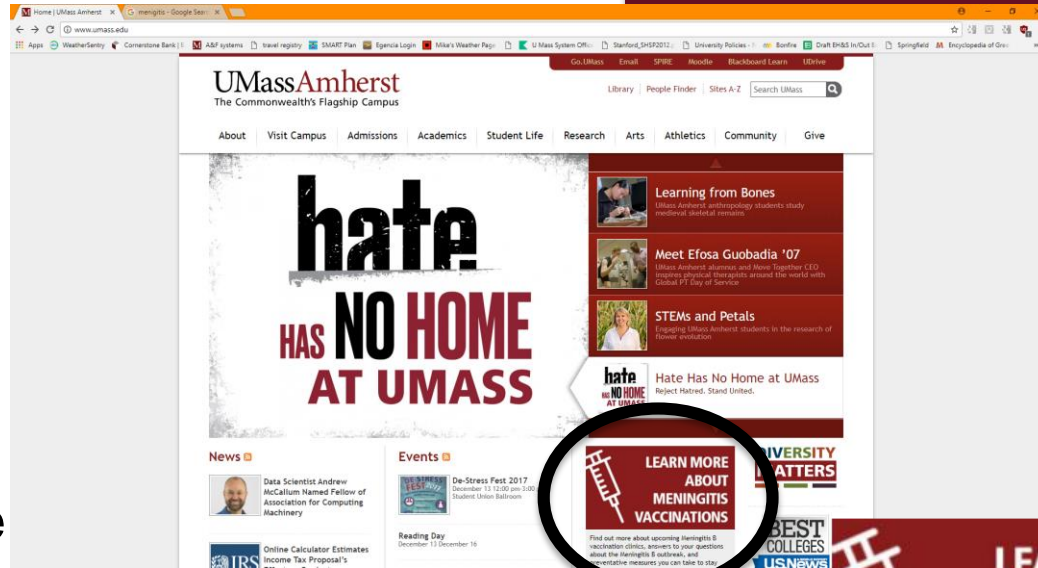
- Unknowns: How many received doses at home (either one or both)

**“We know there are known unknowns; that is to say we know there are some things we do not know. ...”**

- Who got the vaccine at home
- What percentage will receive the second vaccine
- What does the future hold for Men B vaccine regulations
  - *Future Cases?*

# Continuing

- UHS-based walk-up clinics
- Appointments for second series
- See your primary care home
- Dedicated homepage
- Continuing to prepare in the event of additional cases



Find out more about upcoming Meningitis B vaccination clinics, answers to your questions about the Meningitis B outbreak, and preventative measures you can take to stay healthy.

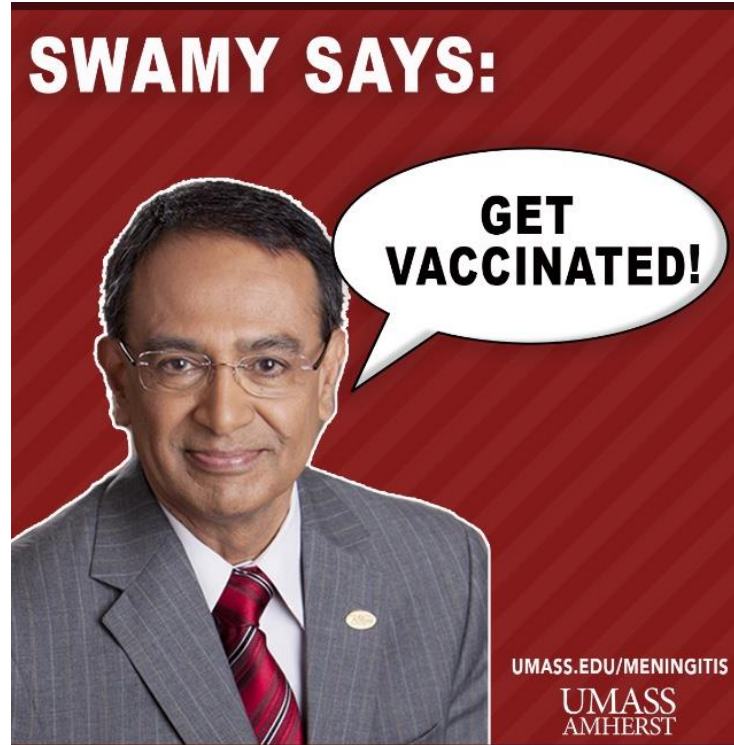
[Learn More](#)

## It worked because:

- Plans and collaboration
- Full senior leadership support on anything we needed
- Table Tops
- Exercises
- MRC/College of Nursing

*\*Planning Pearl: Make and sustain relationships with response partners- now- before you need them*

# Questions?



UMassAmherst  
The Commonwealth's Flagship Campus