

Epi Monthly

Florida Department of Health in Miami-Dade County

February 2019

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This Month in Public Health

- February is American Heart Month and this year's [theme](#) highlights the impact that high blood cholesterol can have on the heart. The Centers for Disease Control and Prevention (CDC) estimate that nearly 1 in 3 adults in the United States has high blood cholesterol, a major risk factor for heart disease and stroke. In 2017, heart disease was the overall leading cause of death among Miami-Dade County residents with an age-adjusted death rate of 148.4 per 100,000 deaths. Test your knowledge on heart disease with a [short CDC quiz](#).
- Congenital Heart Defect Awareness Week was February 7-14 and is observed each year to promote awareness and education about [congenital heart defects](#) (CHDs). The CDC states that CHDs are the most common type of birth defect affecting about 1 out of every 4 babies. Typically, these types of heart defects lead to low levels of oxygen in a newborn and may be identified using pulse oximetry screening at least 24 hours after birth. Pulse oximetry is crucial in detecting seven of the critical CHDs.
- February 14th marked National Donor Day. According to the US Department of Health and Human Services, there are 113,726 patients currently on the waiting list to receive a lifesaving organ transplant, and countless others are in need of cornea, tissue, bone marrow, blood, and platelet donation. National Donor Day aims to decrease this number by raising awareness of the lifesaving gifts of health and sight that you can provide by becoming a registered organ donor. For more information, please visit <https://www.organdonor.gov/>.

In this Issue

This Month in Public Health	1
Epidemiology, History, and the Impact of Vaccination on Meningococcal Disease	2
EDC-IS Influenza Respiratory Illness Surveillance Report	6
Selected Reportable Diseases/Conditions for January 2019	7
What's New at DOH Miami-Dade	8
Did You Know? International Day of Women and Girls in Science	8

Be a Maria.



Learn your heart age at
[CDC.gov/heartdisease/heartage.htm](https://www.cdc.gov/heartdisease/heartage.htm)

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Epidemiology, History, and the Impact of Vaccination on Meningococcal Disease

By: Amena Arshad and Alvaro Mejia-Echeverry

Introduction

Meningococcal disease is a serious infection caused by the bacteria *Neisseria meningitidis* (*N. meningitidis*). Infection causes the membranes that cover the brain and spinal cord to become inflamed. Each year, approximately 1,000 people across the United States get meningococcal disease, which includes meningitis and septicemia.²

How serious is meningococcal disease?

A person with meningococcal disease may develop meningitis (inflammation of the membranes around the brain), septicemia (infection of the blood), or pneumonia. The disease progresses quickly if meningococcal bacteria passes into the circulatory system.^{1,2,5} One to two people of every 10 survivors of meningococcal disease have long-term complications (e.g. extensive skin scarring, limb amputation, hearing loss, seizures, or brain injury). Even when the disease is identified and treated early, one to two people of every 10 infected will not survive the infection.¹¹

Who is at risk?

In the age of antibiotics and vaccines, meningococcal remains one of the primary cause of bacterial meningitis in the world. It is one of the great threats to human health.^{1,7} Anyone can get meningococcal disease, but certain people are at an increased risk including: infants, adolescents and young adults 16 through 23 years old, people with certain medical conditions that affect the immune system, microbiologists who routinely work with isolates of *N. meningitidis*, and people at risk because of an outbreak in their community.²

The first reported international outbreak caused by *N. meningitidis* serogroup A occurred in 1987 following the Hajj pilgrimage with 1,841 confirmed cases of meningococcal disease reported in three cities in Saudi Arabia (Medina, Mecca and Jeddah).⁹ Although most early cases were in pilgrims, the outbreak spread to contacts and then to those with no known pilgrim contact, emphasizing the potentially high risk of transmission of *N. meningitidis* during times of global migration and pilgrimage.⁶ The outbreak spread to the South Asian countries of Pakistan, India, Nepal and Bangladesh, as well as to pilgrims of other nationalities and the Saudi population. Individuals from the sub-Saharan African region were among the pilgrims with lowest attack rate because of vaccination requirements prior to arrival in country.^{9,12}

Meningococcal outbreaks are most common in the African “meningitis belt,” a region in sub-Saharan Africa where the incidence rate of meningitis is high (1,000 cases per 100,000 population) as compared to United States, Europe, Australia, and South America where rates range from 0.15 to 3 per 100,000 population every year.⁷ Historically, outbreaks in the “meningitis belt” were primarily due to serogroup A. In Europe and Australia, serogroups B, C, and Y together account for a large majority of cases, though increasing numbers of serogroup W have been observed in some areas.⁵ Risk for travelers is highest in people visiting “meningitis belt” countries who have prolonged contact with local populations during an epidemic. In the United States, serogroups B, C, and Y cause majority of cases while serogroup W causes small portion of disease. Serogroup B accounts for more than half of all cases in the United States.^{5,14}

Transmission

N. meningitidis, the causative agent of meningococcal disease, is a gram-negative diplococcus.¹ *N. meningitidis* only infects humans and there is no animal reservoir. The bacteria inhabit the nasopharynx in humans and is transmitted through direct contact with large respiratory droplets of infected persons.^{1,5} The bacteria can be carried within the throat and in some cases, overpowers the body's defenses permitting the microscopic organisms to spread through the circulatory system to the brain. Smoking as well as close and prolonged contact—such as kissing, sneezing or coughing on someone—facilitates the spread of the disease.

It is believed that 1% to 10% of the population carries *N. meningitidis* in their throat at any given time; however, the carriage rate may be higher (10% to 25%) in epidemic situations.^{3,5} Transmission of *N. meningitidis* has also been documented during mass gatherings, with recent examples including the Hajj pilgrimage, and jamborees.^{1,3,14}

Testing

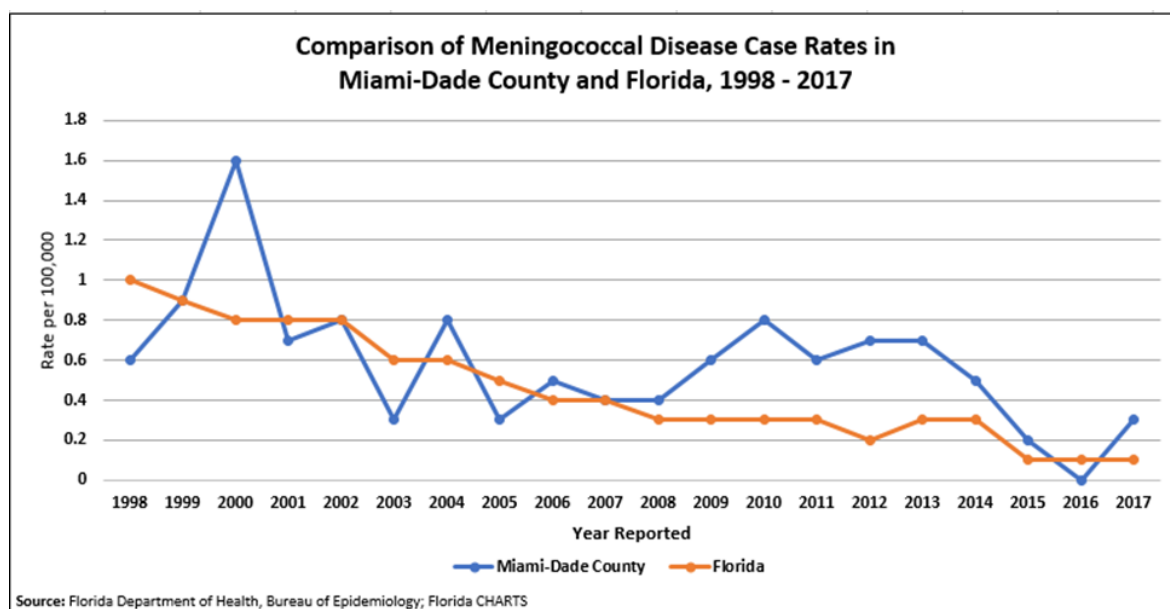
Early diagnosis and treatment are crucial. If symptoms occur, individuals should seek medical attention immediately. The most common symptoms include: purpura, nausea, headache, stiff neck, confusion, discomfort looking at bright lights, and drowsiness.¹⁰ There are two preferred confirmatory testing methods for meningococcal disease: lumbar puncture (spinal tap) or blood tests for bacteria.

Reporting and Surveillance

Meningococcal disease is reportable in Florida and should be reported to the Florida Department of Health in Miami-Dade County immediately upon initial suspicion or laboratory test order. A confirmed meningococcal case is the detection of *N. meningitidis*-specific nucleic acid in a specimen obtained from a normally sterile body site (e.g., blood or CSF or less commonly, synovial, pleural, or pericardial fluid) or purpuric lesions, using a validated polymerase chain reaction (PCR) assay or isolation of *N. meningitidis*.^{7,10} Positive antigen test results from urine or serum samples are unreliable for diagnosing meningococcal disease. Sputum cultures are not considered confirmatory as sputum is not obtained from a normally sterile site.¹⁰

In 2015, the Centers for Disease Control and Prevention (CDC) implemented Enhanced Meningococcal Disease Surveillance (EMDS) to collect additional data and isolates for the national surveillance of meningococcal disease. In 2017, EMDS data was collected from 45 states, U.S. population under this surveillance system was 319,469,805 or 98%. EMDS focuses on: outbreaks 98.0% (337/344) of cases had information on association with an outbreak, 76.5% (263/344) of cases had information on use of the complement component inhibitor eculizumab, male cases aged ≥ 16 years 67.9% (95/140) had information on history of sex with men of those, 18.9% were identified as men who had sex with men (MSM), and 95.1% (327/344) of cases had information on homelessness; of those, 2.4% were identified as homeless.¹³

Figure 1. Comparison of Incidence Rates of Meningococcal Disease in Miami Dade County and Florida, 1998–2017.



Due to the successful development of vaccines, incidence of meningococcal disease has been on a decline in the United States, including Florida, since the 1990s (Figure 1).³ Between 2012–2015, a mere 0.1–0.2 cases reported of meningococcal disease per 100,000 population in the United States. Meningococcal disease incidence was highest in infants less than 1 year of age and mostly occurred during the first 6 months of infancy. About one-third of meningococcal disease cases were caused by serogroups B, C and Y in the United States. Serogroup B was responsible for over 60% of cases in children of less than 5 years of age whereas serogroups C, Y and W135 accounted for 75% of all cases among individuals greater than 11 years of age.^{1,3,8,14}

Florida reported 452 meningococcal cases between 2008 and 2017 and of those cases, Miami-Dade County reported 125 (27.7%). Table 1 describes characteristics of reported cases among Miami-Dade County residents between the years of 2008 and 2017. The majority of reported cases were 60 years of age and older (36%), male (52%), and Hispanic (70%). The vast majority of cases were acquired in Florida (98%) and sporadic (84%), or those not associated with an outbreak.

Table 1. Characteristics of Reported Meningococcal Cases among Miami-Dade County Residents, 2008 – 2017.*

Case Information	Categories	n	(%)
Age Group (in years)	Less than 10	16	(12.8)
	10 – 19	9	(7.2)
	20 – 29	21	(16.8)
	30 – 39	11	(8.8)
	40 – 49	11	(8.8)
	50 – 59	12	(9.6)
	60+	45	(36.0)
Race/Ethnicity	Hispanic	87	(69.6)
	Non-Hispanic Black	22	(17.6)
	Non-Hispanic White	13	(10.4)
	Non-Hispanic Other	1	(0.8)
	Unknown	2	(1.6)
Gender	Female	60	(48.0)
	Male	65	(52.0)
Diagnosis Status	Confirmed	116	(92.8)
	Probable	6	(4.8)
	Suspect	3	(2.4)
Travel	Acquired in Florida	122	(97.6)
	Acquired in the US, not in Florida	1	(0.8)
	Acquired outside of the US	1	(0.8)
	Unknown	1	(0.8)
Outbreak	Outbreak Associated	20	(16.0)
	Sporadic	105	(84.0)

*Data collected January 1st, 2008 through December 31st, 2017.

Prevention

1. Vaccination

Meningococcal disease caused by *N. meningitidis* bacteria can be prevented through vaccination. For over 20 years, there have been vaccines against meningococcal groups A, C, Y and W; however, the development of vaccines against meningococcal group B only recently occurred. This is mainly due to the differences in the immune responses elicited against group B as compared to the groups A, C, Y and W.^{4,8,11}

Today, meningococcal conjugate vaccines (Menactra/Menvenveo) and serogroup B meningococcal vaccines (Bexsero and Trumenba) are available in the United States.⁸ The Advisory Committee on Immunization Practices (ACIP) of the Centers for Disease Control and Prevention (CDC) recommends vaccination of children aged 11-12 years with meningococcal conjugate vaccine and a booster dose is recommended at the age of 16.^{8,10}

2. Prophylaxis

In case of close contacts with suspected exposure, immediate administration of antibiotics can prevent the transmission of meningococcal disease. Ciprofloxacin and Ceftriaxone are the first and second choices of antibiotics respectively.⁸

Conclusion

Meningococcal disease remains a major public health threat causing significant mortality and morbidity throughout the world and immediate medical attention is extremely important. Meningococcal disease is potentially fatal but can be treated with antibiotics to reduce the risk of death or serious long-term problems. Vaccination remains the most effective way to prevent meningococcal disease. Cases should be reported upon suspicion to DOH Miami-Dade County, Epidemiology, Disease Control, and Immunization Services (EDC-IS) at 305-470-5660 (phone) or 305-470-5533 (fax).

References

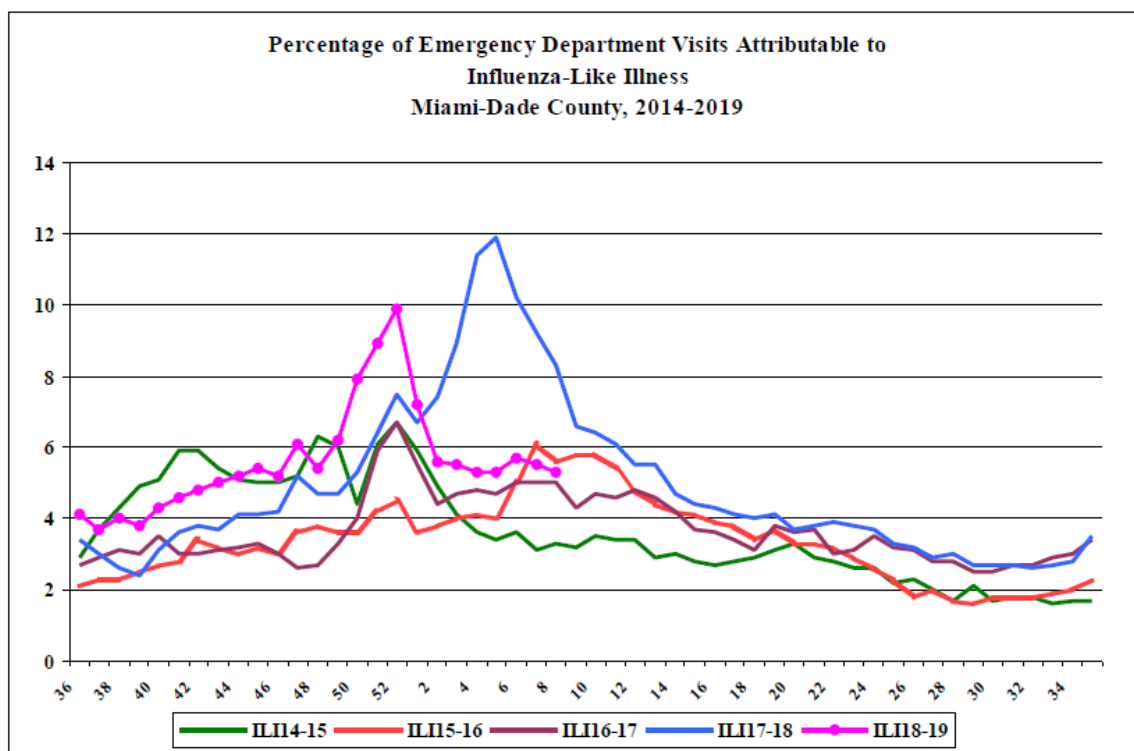
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Florida Department of Health in Miami-Dade County Epidemiology, Disease Control and Immunization Services

Influenza Like Illness Surveillance Report

On a daily basis, all of Miami-Dade County's emergency department (ED) hospitals electronically transmit ED data to the Florida Department of Health. This data is then categorized into 11 distinct syndromes. The influenza-like illness (ILI) syndrome consists of fever with either cough or sore throat. It can also include a chief complaint of "flu" or "ILI". This season's 2017-2018 data is compared to the previous 4 influenza seasons (2013-2014, 2014-2015, 2015-2016, 2016-2017).

Influenza-Like-Illness, All Age



Across all ages, there were 35,742 ED visits; among them 1,892 (5.3%) were ILI. At the same week of last year, 8.3% of ED visits were ILI.

PARTICIPATE IN INFLUENZA SENTINEL PROVIDER SURVEILLANCE

Florida Department of Health in Miami-Dade County NEEDS Influenza Sentinel Providers!

Sentinel providers are key to the success of the Florida Department of Health's Influenza Surveillance System. Data reported by sentinel providers gives a picture of the influenza virus and ILI activity in the U.S. and Florida which can be used to guide prevention and control activities, vaccine strain selection, and patient care.

- Providers of any specialty, in any type of practice, are eligible to be sentinel providers.
- Most providers report that it takes **less than 30 minutes a week** to compile and report data on the total number of patients seen and the number of patients seen with influenza-like illness.
- Sentinel providers can submit specimens from a subset of patients to the state laboratory for virus isolation **free of charge**.

For more information, please contact
Lakisha Thomas at 305-470-5660.



Miami-Dade County Monthly Report Select Reportable Disease/Conditions January 2019

Diseases/Conditions	2019 Current Month	2019 Year to Date	2018 Year to Date	2017 Year to Date
HIV/AIDS				
AIDS*	28	28	52	33
HIV	132	132	104	91
STD				
Infectious Syphilis*	37	37	31	23
Chlamydia*	1134	1134	893	895
Gonorrhea*	358	358	289	211
TB				
Tuberculosis**	7	7	5	2
Epidemiology, Disease Control & Immunization Services				
Epidemiology				
Campylobacteriosis	62	62	57	25
Chikungunya Fever	0	0	0	0
Ciguatera Poisoning	5	5	2	0
Cryptosporidiosis	2	2	0	0
Cyclosporiasis	0	0	0	0
Dengue Fever	9	9	0	0
Escherichia coli, Shiga Toxin-Producing	11	11	5	0
Encephalitis, West Nile Virus	0	0	0	0
Giardiasis, Acute	0	0	1	2
Influenza Novel Strain	0	0	0	0
Influenza, Pediatric Death	0	0	0	0
Legionellosis	3	3	4	3
Leptospirosis	0	0	0	0
Listeriosis	0	0	0	1
Lyme disease	0	0	0	0
Malaria	0	0	3	0
Meningitis (except aseptic)	1	1	0	0
Meningococcal Disease	0	0	0	2
Salmonella serotype Typhi (Typhoid Fever)	0	0	1	0
Salmonellosis	38	38	29	20
Shigellosis	26	26	18	4
Streptococcus pneumoniae, Drug Resistant	0	0	6	2
Vibriosis	1	1	0	1
West Nile Fever	0	0	0	0
Immunization Preventable Diseases				
Measles	0	0	0	0
Mumps	0	0	0	0
Pertussis	3	3	1	0
Rubella	0	0	0	0
Tetanus	0	0	0	0
Varicella	9	9	2	1
Hepatitis				
Hepatitis A	3	3	1	2
Hepatitis B (Acute)	2	2	3	2
Healthy Homes				
Lead Poisoning	18	18	13	6

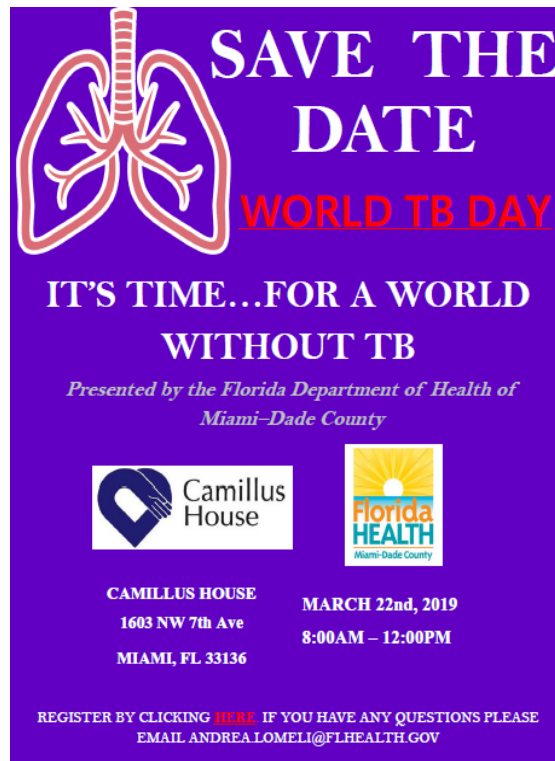
*Data is provisional at the county level and is subject to edit checks by state and federal agencies.

** Data on tuberculosis are provisional at the county level.

Data on EDC-IS includes Confirmed and Probable cases.

What's New at DOH Miami-Dade

- The Florida Department of Health takes pride in celebrating 130 years of protecting, promoting, and improving the health of all people in Florida this year. The state Legislature created the State Board of Health on February 20, 1889 in response to yellow fever epidemics in Jacksonville and other port cities.
- Earlier this month, DOH Miami-Dade released the 2017-2018 Community Health Improvement Plan (CHIP) Annual Report. The CHIP Annual Report evaluates the current status and progress of the strategic health indicators in the 2013-2018 Miami-Dade County CHIP, a five-year collaborative plan to address the public health concerns of the community. The Annual Report can be accessed at: <http://www.healthmiamidade.org/resources/community-health-improvement-plan/>.
- On Friday, March 22, DOH Miami-Dade is celebrating World Tuberculosis (TB) Day. This year's theme, "It's Time," highlights that the time has come to test and treat latent TB infection, and strengthen TB education and awareness among health care providers. The event will take place on March 22 from 9 am to 12 pm at Camillus House and is free and open to the public. To register, please visit: <https://www.surveymonkey.com/r/T767BGG>.



SAVE THE DATE
WORLD TB DAY

IT'S TIME...FOR A WORLD WITHOUT TB

Presented by the Florida Department of Health of Miami-Dade County

CAMILLUS HOUSE
1603 NW 7th Ave
MIAMI, FL 33136

Florida HEALTH
Miami-Dade County

MARCH 22nd, 2019
8:00AM - 12:00PM

REGISTER BY CLICKING [HERE](#). IF YOU HAVE ANY QUESTIONS PLEASE EMAIL ANDREA.LOMELI@FLHEALTH.GOV

Did You Know?



International Day of Women and Girls in Science was celebrated on Monday, February 11. The commemorative day was implemented by United Nations Educational, Science, and Cultural Organization (UNESCO) and the United Nations Entity for Gender Equality and the Empowerment of Women (UN Women), in collaboration with institutions and civil society partners that aim to promote women and girls in science. Over the past 15 years, the global community has made a significant effort in inspiring and engaging women and girls in science. Nevertheless, it is estimated that less than 30% of Science, Technology, Engineering, and Mathematics (STEM) researchers worldwide are women. To read more on this topic and for some inspiration, please visit the [CDC Women in STEM Careers](#) page.

To report diseases and for information, call EDC-IS at:

Childhood Lead Poisoning Prevention Program	305-470-6877
Epidemiology and Disease Surveillance	305-470-5660
Hepatitis Program	305-470-5536
HIV/AIDS Program	305-470-6999
Immunization Services	305-470-5660
STD Program	305-575-5430
Tuberculosis Program	305-575-5415
Appointment Line	786-845-0550

About the Epi Monthly Report

The Epi Monthly Report is a publication of the Florida Department of Health in Miami-Dade County: Epidemiology, Disease Control & Immunization Services. The publication serves a primary audience of physicians, nurses, and public health professionals. Articles published in the Epi Monthly Report may focus on quantitative research and analysis, program updates, field investigations, or provider education. For more information or to submit an article, please contact Danielle Fernandez at 305-470-6980 or danielle.fernandez@flhealth.gov.

