Epi Monthly

Florida Department of Health in Miami-Dade County August 2019 Vol 20, Issue 8

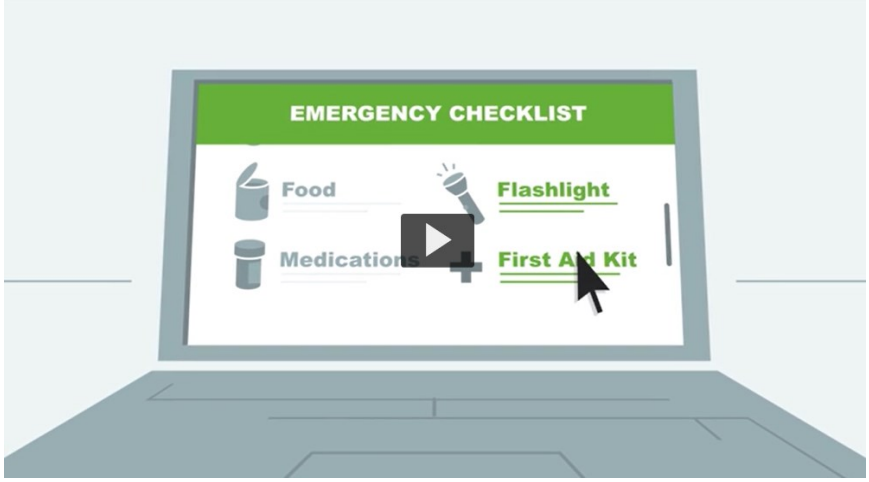
Public Health LOOK OUT!

- September is National Preparedness Month (NPM). This year's theme, "Prepared, Not Scared," empowers individuals and families to practice family and community disaster and emergency planning now and throughout the year. The Department of Homeland Security encourages individuals and families to make a plan in the event of a disaster and practice this plan with your loved ones. For more resources visit the Prepared, Not Scared webpage.

- September marks Sepsis Awareness Month. The Sepsis Alliance created the "Sepsis Awareness: It's About T.I.M.E." campaign to increase public awareness on the signs and symptoms of sepsis and the urgent need to seek medical treatment when signs are present: abnormal Temperature, signs of Infection, Mental decline, and feeling Extremely ill. The Centers for Disease Control and Prevention (CDC) encourage healthcare providers to Get Ahead of Sepsis: Know the Risks. Spot the Signs. Act Fact.

- September 8 – 14 is recognized as National Suicide Prevention Week. Suicide is a growing, yet preventable, public health problem, culminating in more than 45,000 deaths in the US in 2016. In 2017, the CDC released, "Preventing Suicide: A Technical Package of Policies, Programs, and Practices," to share best practices and resource such as the National Suicide Prevention Hotline, which provides 24/7, free and confidential support for people in distress and best practices for professionals. For more information, please visit the CDC Suicide Prevention page or the National Suicide Prevention Hotline page.

In this Issue



Please click the image to the left to watch the video.

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National Immunization Awareness Month: Why Vaccinate?

By: Cynthia Goldberg

National Immunization Awareness Month (NIAM) is an annual observance held in August to highlight the importance of vaccination for people of all ages. Since the development of vaccines, the morbidity rate for certain infectious diseases has significantly decreased.[1] A few diseases, such as smallpox, polio, and rinderpest have been eradicated since the introduction of the vaccines. Even though there are vaccines for many infectious diseases, these diseases are still considered a threat in the United States due to a decrease in vaccination rates.

Vaccines are completely safe and effective for you and your child. Getting the vaccines at the recommended time is the best way to protect against serious diseases. Certain vaccines, such as Hepatitis B, are recommended to be given at birth, however catch-up schedules are available for those who did not receive the vaccine at birth. Some vaccines have multiple doses or boosters in-order to be the most effective.[2] It is best to follow the recommended immunization schedule. Possible minor side effects of vaccinations include soreness at the site of injection or low-grade fever; however, these will likely subside within few days. Severe, long lasting side effects are extremely rare.

Source: CDC NIAM Graphic

The 2019 edition of Epidemiology and Prevention of Vaccine Preventable Diseases, also known as the "Pink Book" includes the book and a webinar series on topics spanning from an overview of the principles of vaccination and general recommendations to immunization strategies for providers, as

The Florida Department of Health in Miami-Dade County provides immunization services to protect residents and visitors from vaccine preventable diseases. The Immunization Services program provides immunizations and education for infants, children, and adults, including free vaccines to all children (0 to 18 years) in three clinics around the county and adult and travel vaccines for both children and adults for a nominal fee.[4] To schedule an appointment, contact the program at (786) 845-0550 or visit our website. In the state of Florida, children are required to be vaccinated prior to attending childcare and/or family daycare. Another set of vaccines are required prior to preschool and seventh grade. The three time periods when vaccines are required to be administered for education are based on the child's age. The list of required immunization per grade can be found on the departments website.

List of recommended vac-

- Chickenpox (Varicella)
- Diphtheria
- Flu (Influenza)
- Hepatitis A
- Hepatitis B
- Hib (*Haemophilus influenzae type b*)
- HPV (Human Papillomavirus)
- Measles
- Meningococcal
- Mumps
- Pneumococcal
- Poli (Poliomyelitis)
- Rubella (german Measles)
- Shingles (Herpes Zoster)
- Tetanus (Lockjaw)

The introduction of vaccines has made a significant contribution to global health. Programs such as WHO's Expanded Programme of Immunization, developed in 1974, and the Global Alliance for Vaccination and Immunization, developed in 2000, were created to increase vaccination rates throughout the world by providing universal access for all at risk.[5] Preventable infectious diseases such as measles have decreased through vaccination. Before 1963, there was an estimate of 3 to 4 million people who were infected with the virus each year in the United States; since the measles vaccination program started in 1963 there has been a 99% reduction in cases.[6] However, in recent years the cases of measles have increased throughout the world, including the United States, due to low rate of vaccinations. As of August 22, 2019, there have been 1,215 cases of measles reported in the United States.[7] Thus, it is important to review the immunization guidelines to see when it is the best time to receive vaccine to protect yourself, your child, and the public.

References

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Ten-year analysis of reported Shiga toxin-producing *Escherichia coli* cases in Miami-Dade County, FL 2009-2018

By: Stephanie Calle

What are Shiga-toxin producing *Escherichia coli*?

Shiga toxin-producing *Escherichia coli* (STEC) refers to a group of bacterial pathogens that are naturally found in the gastrointestinal tract of ruminant animals, such as cows and sheep.[1-3] To the animals in which they normally inhabit, STEC do not cause harm. In humans, however, these bacteria are known to cause mild to severe gastrointestinal illness.[1,2] Common transmission sources are STEC-contaminated water and food, animal contact, and person-to-person transmission, as depicted in Figure 1.[2,3] While some STEC-infected individuals can be asymptomatic, the majority will develop at least one of the following symptoms: diarrhea, abdominal pain, blood in stool, vomiting, and fever.[2,3] Symptoms can develop anywhere between one to ten days after infection, but typically appear within three to four days.[1] In young children and the elderly, STEC infections can lead to grave health complications such as hospitalization due to severe dehydration and kidney damage due to hemolytic uremic syndrome (HUS).[1-3] Because of this, the identification of these bacteria in a laboratory setting is reportable in Florida and the United States since 1994.[4,5]

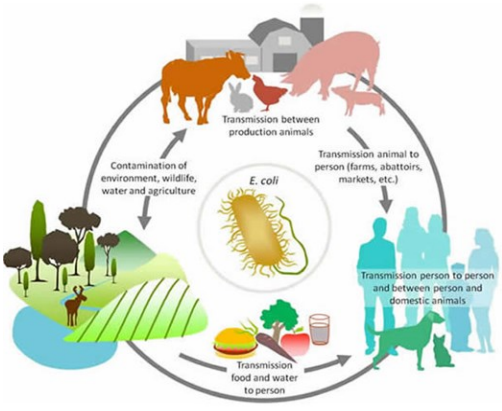
While *E. coli* O157:H7 is the STEC serogroup that is usually responsible for national outbreaks of STEC infections and is the most commonly isolated serogroup in patient stool samples in North America, it is by no means the only strain *of E. coli* that can cause human illness.[1] In fact, there are over 400 *E. coli* serogroups that can produce the Shiga toxin and of those, over 100 serogroups have been linked to cases of gastrointestinal illness worldwide.[3,6,7] The top six non-O157 serogroups that are known to cause illness in the United States are: O26, O45, O103, O111, O121, and O145.[6] Due to testing limitations and less frequent identification, very little is known about these other STEC serogroups (also known as non-O157 STEC).[6,7]

At the beginning of 2018, the Florida Department of Health (FDOH) implemented the updated case definition for STEC to reflect the Position Statements made at the 2017 Council of State and Territorial Epidemiologists annual meeting.[8] The updated case definition now includes "abdominal cramps" as sufficient clinical criteria to establish the creation of a case in the presence of supportive laboratory evidence of the presence of Shiga toxin or Shiga toxin genes. An increase in the number of confirmed and total reported STEC cases was anticipated to occur due to this update. In general, a confirmed case is one in which there are confirmatory positive laboratory results from Florida's Bureau of Public Health Laboratories (BPHL) available. A probable case is one in which there is a positive commercial laboratory result but no supporting positive laboratory results from BPHL as well as reported symptoms, mainly diarrhea and abdominal cramps. A suspect case is one that has symptoms of STEC infection only or evidence of Shiga toxin/ Shiga toxin genes using culture-independent diagnostic testing only. The purpose of this analysis was to summarize the demographic characteristics, exposures, and any available bacterial strain laboratory information of all STEC cases that were reported to the Department of Health in Miami-Dade County (DOH-Miami-Dade) from 2009 to 2018.

Methods

Data for STEC case investigations of Miami-Dade County residents with symptom onset dates, clinical diagnosis dates, or lab report dates between 2009 and 2018 were pulled from the Florida Department of Health Epidemiology electronic surveillance system, Merlin. The data were analyzed using SAS version 9.4. The variables analyzed were age, gender, race/ethnicity, reporting method used, symptoms, exposures, disease complications, bacterial strain (serogroup), and the year in which the case was reported. ArcGIS 9.6 was used to produce a map of the number of STEC cases reported by zone improvement plan (ZIP) code in Miami-Dade County from 2009 to 2018.

Figure 1. Transmission cycle of STEC.



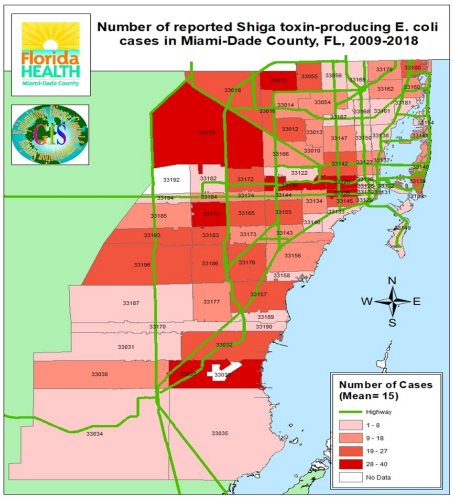
Source: The Reference Laboratory for Escherichia coli (EcL)'s webpage regarding "Pathogenic E. coli": http://www.ecl-lab.com/en/ecoli/index.asp

Results

From 2009 to 2018, a total of 1,167 cases were reported to DOH-Miami-Dade. Of them, 229 (19.62%) had a disease status of confirmed, 134 (11.48%) cases had a disease status of probable, and 804 (68.89%) cases had a disease status of suspect. Females accounted for a slightly higher percentage of cases than males (51.67% versus 48.07%). The age of the affected individuals ranged from 0 to 92 with mean 17.64±25.61 years.

Children aged 0 to 17 years accounted for 62.04% of the cases. The race/ethnicity category of Hispanic accounted for 73.09% of all the cases (Table 1). The most common methods used to report cases of STEC were electronic laboratory results (79.78%) followed by hospital reporting (10.37%). The average number of reported cases by ZIP code over the ten-year time period was 15 (Figure 2).

Figure 2. Number of E. coli cases by zip code.



The reported symptoms among all cases were diarrhea (91.69%), abdominal cramps/pain (46.62%), fever/chills (23.05%), blood in stool (15.51%), and nausea (0.09%). As far as complications experienced as a result of STEC infection, 226 (19.37%) cases reported utilizing the emergency department for evaluation, of which 54 required inpatient hospitalization as a result of this illness. No deaths were reported during this time period but there were two (0.17%) cases that reported developing hemolytic uremic syndrome (one confirmed case and one probable).

Most cases (64.61%) did not travel outside of the county during the seven-day exposure period, which indicates that they acquired the infection locally. Only 177 (15.17%) of all cases reported a symptomatic contact and of those, 143 were household contacts. There were 262 (22.45%) cases that reported contact with animals, 137 (11.74%) cases were identified as daycare attendees, and 113 (9.68%) cases reported having contact with a diapered child or adult. The majority of cases (92.37%) did not have sensitive work occupations; there were only three cases that identified as daycare staff, two that identified as food handlers, and ten that identified as health care workers.

Even though the consumption of undercooked ground beef is a common risk factor for STEC, only 1.46% of the all cases reported this exposure.[2] In fact, of all the types of undercooked meats that cases reported consuming, steak/roast beef was consumed by the most cases (3.94%). Eating food from a restaurant was the most common food-related exposure among cases (20.91%) followed by preparing/handling raw meat (14.14%). Food-related exposures that were reported by less than five percent of cases were: eating at a group meal, eating food in an outdoor setting, consuming unpasteurized milk, dairy, or juice, and drinking unfiltered water.

Between 2009 and 2013, there was an increasing trend in the frequency of all STEC cases (Figure 3). That trend changed to decreasing after 2013 until the end of 2015 but returned to an increasing trend after 2015. As anticipated, the frequency of cases in 2018 was higher than that of the previous year – 208 reported cases compared to 2017's 170 cases- and accounted for 17.82% of all of the reported cases in the ten-year time period analyzed.

Laboratory data on the strain or serogroup of the *E. coli* identified in case stool specimens was available as early as 2009, although limited. It was not until 2012 that data on serogroup became more common in laboratory reports. During the ten-year time period, there were 17 serogroups identified in the stool samples from cases: O1, O26, O69, O71, O88, O91, O103, O111, O112, O113, O118, O121, O128, O137, O145, O146, and O157.

Conclusion

This ten-year analysis showed that for all reported cases, less than 10% achieved a disease status of "confirmed" which may indicate issues with timely transfer or handling of specimens to BPHL for confirmatory testing. Inadequate hand hygiene before food preparation, before eating, after using the restroom, or after having contact with an animal plays a huge role in the persistence of STEC transmission in communities. Education can be targeted to children (0 to 17 years of age) and their caregivers since this was the age group that was most affected. The total number of reported STEC cases for 2018 (208) reached a peak during the ten-year time period. This rise could be a result of the change in case definition implemented at the beginning of 2018, which allowed for a greater capture of STEC cases in the community.

Figure 3. Frequency of STEC cases by disease status and reporting year

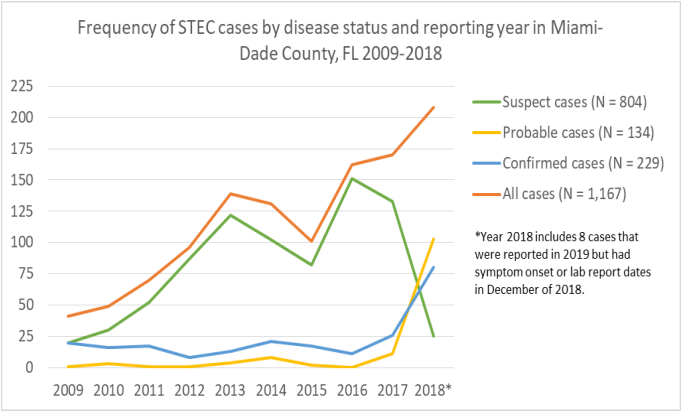


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Table 1. Demographic characteristics of STEC cases for 2009 through 2018.

	All cases (N = 1,167)		Confirmed cases (N = 229)		Probable cases (N = 134)		Suspect cases (N = 804)	
Age Range	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**
0 to 17	724	62.04	165	72.05	70	52.24	489	60.82
18 to 6	205	17.57	34	14.85	45	33.58	126	15.67
65+	129	11.05	8	3.49	12	8.96	109	13.56
Missing	109	9.34	22	9.61	7	5.22	80	9.95
Gender								
Female	603	51.67	105	45.85	69	51.49	429	53.36
Male	561	48.07	121	52.84	65	48.51	375	46.64
Unknown	3	0.26	3	1.31	0	0.00	0	0.00
Race/Ethnicity								
Hispanic	853	73.09	177	77.29	95	70.90	581	72.26
Non-Hispanic, White	173	14.82	23	10.04	18	13.43	132	16.42
Non-Hispanic, Black	64	5.48	9	3.93	14	10.45	41	5.10
Non, Hispanic, Other[1]	29	2.49	5	2.18	6	4.48	20	2.49
Unknown	48	4.11	15	6.55	1	0.75	30	3.73

[1]**Includes Non-Hispanic American Indian, Non-Hispanic Asian, Non-Hispanic Other, and Non-Hispanic Unknown**

Table 2. Frequency of symptoms experienced by case disease status for 2009 through 2018.

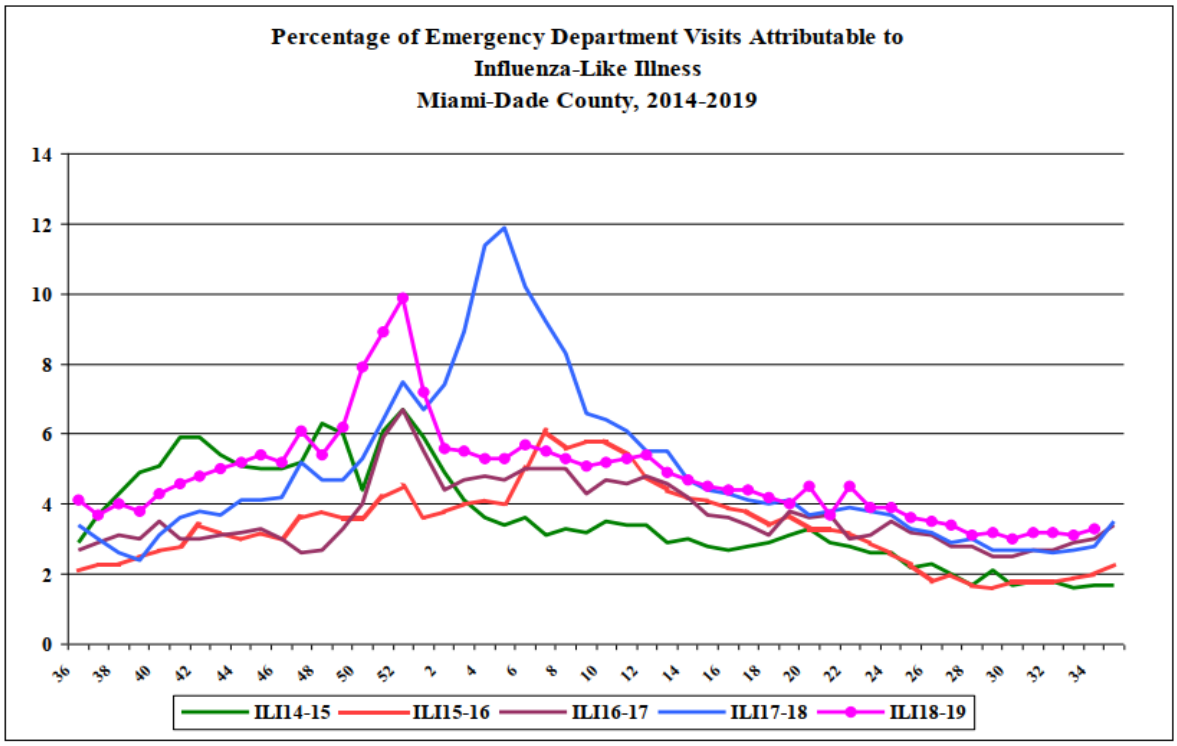
	Confirmed cases (N = 229)		Probable cases (N = 134)		Suspect cases (N = 804)	
Symptoms	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**
Diarrhea	194	84.72	132	98.51	744	92.54
Abdominal Cramps/Pain	102	44.54	76	56.72	366	45.52
Fever/Chills	55	24.02	27	20.15	187	23.26
Blood in Stool	38	16.59	8	5.97	135	16.79
Nausea	1	0.44	0	0.00	0	0.00
Vomiting	0	0.00	0	0.00	0	0.00
Asymptomatic	0	0.00	0	0.00	0	0.00

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 2018-2019 data is compared to the previous 4 influenza seasons (2014-2015, 2015-2016, 2016-2017, 2017-2018).

Influenza-Like-Illness, All Age



Across all ages, there were 31,669 ED visits; among them 1,051 (3.3%) were ILI. During the same week last year, 2.8% 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
Stephanie Calle at 305-470-5660.

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

Diseases/Conditions	2019 Current Month	2019 Year to Date	2018 Year to Date	2017 Year to Date
HIV/AIDS				
AIDS*	37	252	273	258
HIV	108	876	822	789
STD				
Infectious Syphilis*	27	257	225	248
Chlamydia*	1284	8868	7398	7123
Gonorrhea*	441	2726	1933	1607
TB				
Tuberculosis**	8	76	70	52
Epidemiology, Disease Control & Immunization Services				
Epidemiology				
Campylobacteriosis	95	523	510	376
Chikungunya Fever	0	0	0	0
Ciguatera Poisoning	1	26	19	7
Cryptosporidiosis	3	31	18	18
Cyclosporiasis	14	17	0	0
Dengue Fever	12	42	3	2
Escherichia coli, Shiga Toxin-Producing	20	81	93	21
Encephalitis, West Nile Virus	0	0	0	0
Giardiasis, Acute	21	106	106	73
Influenza Novel Strain	0	0	0	0
Influenza, Pediatric Death	0	0	1	1
Legionellosis	3	31	29	18
Leptospirosis	0	0	0	0
Listeriosis	0	1	2	5
Lyme disease	1	1	1	2
Malaria	0	3	7	5
Meningitis (except aseptic)	2	9	7	2
Meningococcal Disease	0	2	0	6
Salmonella serotype Typhy (Typhoid Fever)	0	2	2	1
Salmonellosis	140	499	405	369
Shigellosis	23	162	196	63
Streptococcus pneumoniae, Drug Resistant	2	10	12	19
Vibriosis	0	10	5	3
West Nile Fever	0	0	0	0
Zika Virus (non-congenital)	3	17	16	65
Immunization Preventable Diseases				
Measles	0	0	3	0
Mumps	26	44	6	1
Pertussis	5	19	13	19
Rubella	0	0	0	0
Tetanus	0	0	0	0
Varicella	14	74	48	25
Hepatitis				
Hepatitis A	5	27	6	71
Hepatitis B (Acute)	12	48	21	24
Healthy Homes				
Lead Poisoning	14	86	106	132

*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.

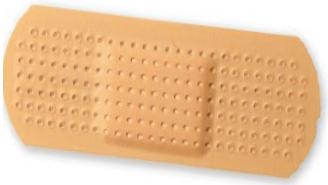
Data on EDC-IS includes Confirmed and Probable cases.

What's New at DOH Miami-Dade

- The Florida Department of Health in Miami-Dade County (DOH Miami-Dade) has issued a mosquito-borne illness alert for Miami-Dade County. This comes after a third case of local transmission of Dengue was confirmed in a Miami-Dade resident. The three cases do not appear to be related. The DOH Miami-Dade encourages the community to Drain and Cover to protect against mosquitos.
- DOH Miami-Dade's WIC Program hosted the "2019 Breastfeed Miami: Big Latch On" event in partnership with IKEA in honor of World Breastfeeding Week. The event had 84 moms and 250 guests in attendance and marked the grand opening of a dedicated lactation room at the IKEA Miami store. It is the first of its kind for IKEA in the United States!
- Earlier this month Florida Surgeon General Dr. Scott A. Rivkees Issued a Public Health Emergency in Response to Hepatitis A Outbreak. This was a proactive step to prevent further spread of Hepatitis A in the state. For questions about Hepatitis A, FDOH has established a dedicated email address: HepA@flhealth.gov and an information line: 1-844-CALL-DOH (1-(844) –225-5364) available M-F 8am-5pm.

Protect yourself.

Hepatitis A is on the rise in Florida counties.



Get vaccinated.

Wash your hands.

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 Vanessa Villamil at 305-470-5643 or vanessa.villamil@flhealth.gov.

Florida HEALTH Miami-Dade County