

EPI Monthly Report

Florida Department of Health in Miami-Dade County

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Enterovirus D68 (EV-D68)

Isabel Griffin, MPH, Emily Davenport

Background

Every year, non-polio enteroviruses cause 10 to 15 million infections in the United States (1). Enterovirus D68 is one of the more than 100 different subtypes of non-polio enterovirus. People are more likely to get infected with non-polio enterovirus in the summer and fall (1). Infants and children, who do not have immunity from previous exposures to the viruses, are more likely to get infected. When a person with a normal immune system becomes infected they may have mild illness. However, those with weakened immune systems, or children with asthma, have a greater chance of having complications.

Transmission

Non-polio enteroviruses can be found in an infected person's stool, mucosa secretions (saliva, nasal mucus, or sputum), or blister fluid. Exposure can happen during any activity where someone comes in contact with these secretions. For example, exposure can take place when touching fomites (objects or surfaces) that are contaminated with the virus, touching or shaking hands with an infected person, changing diapers of an infected person, or even drinking virus contaminated water. Pregnant women who become infected shortly before delivery can pass along the virus to the fetus. These babies usually only have mild illness, but in rare cases can develop a severe infection.

Clinical Symptoms

Clinical symptoms of mild EV-D68 infection can include fever, runny nose, sneezing, cough, skin rash, mouth blisters, and body and muscle aches. Severe infection may result in symptoms such as wheezing and difficulty breathing. Occasionally, infection can cause viral conjunctivitis (pink-eye), hand, foot, and mouth disease, and viral meningitis. Rare infections can include myocarditis (infection of the heart), pericarditis (infection of the sac around the heart), encephalitis (infection of the brain) and paralysis.

Laboratory Diagnosis

CDC recommends that clinicians only consider EV-D68 testing for patients with severe respiratory illness, when the cause is unclear. General testing can be performed in hospitals and in some doctor's offices. However, tests performed in hospitals are not able to determine the type of enterovirus. If both influenza and respiratory syncytial virus (RSV) have been ruled out, providers can contact local health departments for further enterovirus typing. Enterovirus typing is available at the Bureau of Public Health State Lab in Miami and at the CDC.

Infection with non-polio enteroviruses can be confirmed by isolating the virus in cell culture or through PCR. Collected specimens should be based on the patient's symptoms, which can include stool or rectal swab, respiratory specimen, CSF, blister fluid and blood. Specimens should be collected according to CDC guidelines on non-polio

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enterovirus specimen collection, storage, and shipment. It is important to note that a positive laboratory test for non-polio enteroviruses from certain specimens, such as rectal or respiratory swabs do not indicate that the virus is the cause of the current infection. Non-polio enteroviruses can be shed for several weeks after infection (1).

Prevention & Treatment

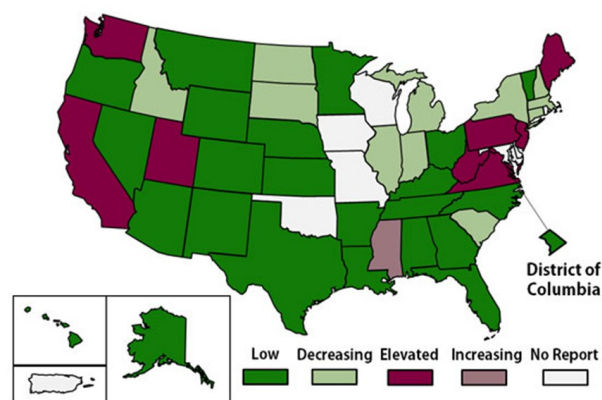
Currently, a vaccine to prevent non-polio enterovirus infection does not exist. Asymptomatic individuals make it difficult to prevent these viruses from spreading. The CDC recommends washing your hands, especially after using the restroom and changing diapers. Avoid close contact with people who are sick. Clean and disinfect frequently touched surfaces, such as doorknobs and TV remote controls. Standard, Contact, and Droplet precautions should be taken while caring for EV-D68 patients. There is no specific treatment for EV-D68, other than symptom treatment.

EV-D68 in the United States

Between mid-August and October 23, 2014, public health officials have confirmed a total of 793 people in 47 states and the District of Columbia with respiratory illness caused by EV-D68 (2). The following figure from CDC shows the activity of enterovirus-D68-like illness in reporting states for the week of October 12-18, 2014. As of October 24, 2014, EV-D68 is not a reportable disease in the state of Florida. The Florida Department of Health in Miami-Dade County has distributed guidance to local hospitals and physicians regarding EV-D68.

Healthcare providers should report suspected clusters of severe respiratory illness to the Florida Department of Health in Miami-Dade at 305-470-5660 (24/7, 365).

Figure-1. Activity of enterovirus-D68-like illness in reporting states for the week of October 12-18, 2014 (2)



References

1. Centers for Disease Control and Prevention (CDC), National Center for Immunization and Respiratory Diseases, Division of Viral Diseases. Retrieved from <http://www.cdc.gov/non-polio-enterovirus/>.
2. Centers for Disease Control and Prevention (CDC), National Center for Immunization and Respiratory Diseases, Division of Viral Diseases. Retrieved from <http://www.cdc.gov/non-polio-enterovirus/outbreaks/EV-D68-outbreaks.html>

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Norovirus Outbreak at Local Elementary School

Isabel Griffin, MPH, Anthony Llau, MPH, Emily Davenport

Background

On September 24, 2014, the Florida Department of Health in Miami-Dade, Epidemiology, Disease Control & Immunization Services (EDC-IS) received a fax from Public School Comprehensive Health Services (CHS) reporting a student with possible viral meningitis who was admitted at a local hospital. After receiving the fax, CHS called EDC-IS to report 15 students at the same school with gastrointestinal symptoms. An investigation was immediately initiated and additional information was requested from both the hospital and the elementary school.

The school has grades from Pre-K through 5th, including several special needs classes. After reviewing the EDC-IS daily school absenteeism report, it was noted that the absentee rate for 9/23 was 11% and 9/24 was 9.7%, which exceeded the threshold of 8%.

On September 25, 2014, EDC-IS received a second line list from the school reporting an additional 28 ill students from different grades and 2 ill staff with dates of onset between 9/23 and 9/24. Of the 45 ill individuals, EDC-IS made 30 calls and conducted 17 interviews on 9/24 and 9/25. During interviews, a questionnaire was used to evaluate reported symptoms, onset date, grade, food history and ill contacts. According to initial interviews, the earliest onset was on Sunday, September 21 and most had recovered by Thursday, September 25. Symptoms reported were primarily vomiting, diarrhea, and a few low grade fevers. Some parents reported that their children bring their own lunch to school. Interviews also identified siblings with similar GI symptoms. EDC-IS determined that the student with viral meningitis was not part of the outbreak.

On September 25, 2014, a written recommendation letter with control measures was provided to the facility. On September 26, 2014, Environmental Health (EH), EDC-IS, and School Health conducted a joint site visit at the elementary school. EH inspected food preparation procedures in the facility's kitchen and found no violations of concern. School Health assisted EDC-IS in obtaining parent contact information of ill students. EDC-IS conducted interviews with parents of ill students and ill staff. Specimens were arranged to be collected from three students and one teacher for testing at the Florida Bureau of Public Health Laboratories (BPHL) for norovirus and bacterial pathogens. During and after the site visit additional students and staff were reported ill, as a result EDC-IS continued to conduct interviews until October 10th. In order to determine the extent of the outbreak, EDC-IS analyzed the collected data for epidemiological risk factors.

Methods

A case of gastrointestinal illness was defined as a student or staff member who reported vomiting, diarrhea, or nausea and was present at the school any time during September 19 - October 8. EDC-IS attempted to interview 9 ill staff and the parents of 87 ill students. Variables of interest included symptoms, grade, classroom, lunch round, gender, age, and class type (special needs vs. general). Attack rates by classroom, grade and lunch round were determined using rosters provided by the school and compared using chi-square tests. SAS 9.3 was used to analyze data obtained from the questionnaires.

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Results

Of the 96 ill persons, 69 were interviewed and 27 were unable to be contacted. Of those interviewed, 51 (74%) met the case definition (45 students, 6 staff). The peak incidence was on September 23rd (see Figure 1). Reported symptoms among cases included vomiting (90%), diarrhea (49%), nausea (24%), and additional symptoms included abdominal pain and fever. Age distribution among students ranged from 4 to 11 years old (mean 7.49). Age distribution among staff ranged from 43 to 66 years old (mean 51.8). Of the 45 ill students interviewed, thirteen attended special needs classes (29%). There were no differences in attack rate by classroom type. Attack rates were significantly higher among third graders (14.5%) and third lunch round (13.1%) compared to other grades and rounds.

Four stool specimens from three students and one staff were submitted for testing at BPHL Miami and Tampa. Two results came back positive for norovirus G2, one was negative, and one was not tested because of insufficient sample. All were negative for ova and parasite, and bacterial pathogens.

Discussion

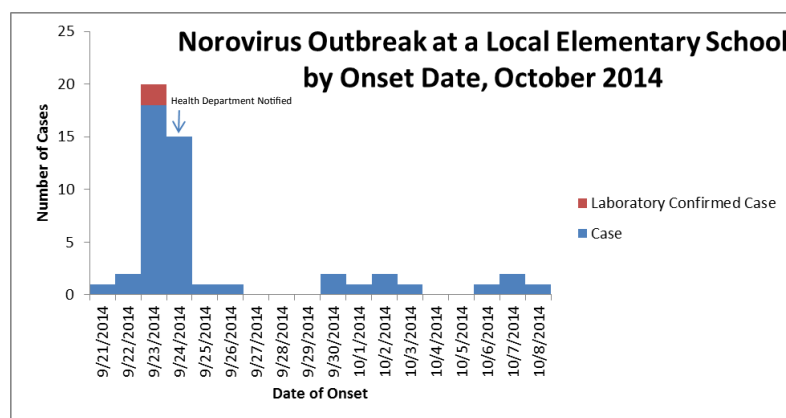
Illness was not significantly associated with classroom. However, the attack rates among 3rd graders were significantly higher compared to all other grades. Since most of the third graders attend the third lunch round, attack rates were significantly higher in this round. Vomiting and diarrhea were the most frequent symptoms reported, which is indicative of persons with norovirus. A parent letter was provided to the school on October 7th. Due to the continual report of ill cases,

the importance of good hand washing practices, exclusion of ill persons, and thorough environmental cleaning was emphasized to the school. On October 8th, two FDOH school nurses visited the school to provide educational classes on hand hygiene. In addition, multiple environmental cleanings of the school were conducted during the outbreak.

Foodborne or waterborne transmission was not suspected because some of the ill students and staff had brought lunch from home; therefore, person-to-person transmission was more likely. Risk factors for norovirus transmission include poor hand hygiene, close person to person contact and through contaminated surfaces or fomites. Norovirus can be prevented by frequent hand washing with soap and water, cleaning and disinfecting contaminated surfaces by using a chlorine-based solution, and keeping ill persons isolated at home until symptoms have resolved.

Healthcare providers should report suspected clusters of gastrointestinal illness to the Florida Department of Health in Miami-Dade at 305-470-5660 (24/7, 365).

Figure-1. Distribution of cases by date of onset



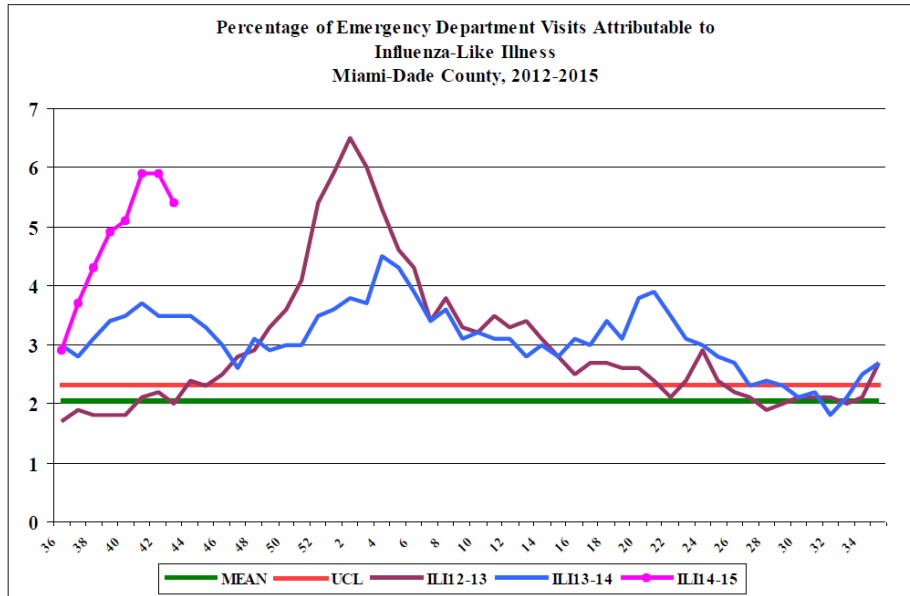


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Influenza-Like-Illness, All Age



During this period, there were 24,968 ED visits; among them 1,346 (5.4%) were ILI. At the same week of last year, 3.5% 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.

TO REPORT ANY DISEASE AND FOR INFORMATION CALL: Epidemiology, Disease Control & Immunization Services

Childhood Lead Poisoning
 Prevention Program305-470-6877
 Hepatitis305-470-5536
 Immunizations or outbreaks305-470-5660
 HIV/AIDS Program305-470-6999
 STD Program305-575-5430
 Tuberculosis Program305-575-5415
 Immunization Service305-470-5660
 To make an appointment.....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, contact Lakisha Thomas at (305) 470-5660.

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Miami-Dade County Monthly Report Select Reportable Disease/Conditions September 2014

Diseases/Conditions	2014 Current Month	2014 Year to Date	2013 Year to Date	2012 Year to Date
HIV/AIDS				
AIDS*	43	422	554	429
HIV	164	1115	1100	797
STD				
Infectious Syphilis*	21	261	267	234
Chlamydia*	839	7312	7612	7110
Gonorrhea*	189	1612	1801	1782
TB				
Tuberculosis**	12	92	88	81
Epidemiology, Disease Control & Immunization Services				
Epidemiology				
Cam pylobacteriosis	22	285	284	273
Chikungunya Fever	17	49	0	0
Ciguatera Poisoning	3	20	20	15
Cryptosporidiosis	10	30	18	19
Cyclosporiasis	0	1	2	1
Dengue Fever	5	27	34	24
Escherichia coli, Shiga Toxin-Producing	0	16	8	4
E. coli, Non-O157	0	0	0	0
Encephalitis, West Nile Virus	0	0	0	0
Giardiasis, Acute	21	171	202	167
Influenza Novel Strain	0	0	0	0
Influenza, Pediatric Death	0	0	0	0
Legionellosis	0	14	20	14
Leptospirosis	0	0	0	0
Listeriosis	0	2	1	1
Lyme disease	1	4	5	4
Malaria	0	5	8	6
Meningitis (except aseptic)	2	6	27	16
Meningococcal Disease	0	7	15	12
Salmonella serotype Typhi (Typhoid Fever)	0	1	2	2
Salmonellosis	52	451	435	389
Shigellosis	17	634	47	59
Streptococcus pneumoniae, Drug Resistant	0	36	67	56
Toxoplasmosis	0	0	0	0
Vibriosis	1	6	10	3
West Nile Fever	0	0	0	0
Immunization Preventable Diseases				
Measles	0	0	0	0
Mumps	0	0	0	1
Pertussis	5	29	36	52
Rubella	0	0	0	0
Tetanus	0	0	0	0
Varicella	3	37	49	37
Hepatitis				
Hepatitis A	7	30	26	19
Hepatitis B (Acute)	2	10	13	15
Lead				
Lead Poisoning	12	57	71	67

*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.