EPI Monthly Report

Florida Department of Health in Miami-Dade County

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A Gastroenteritis Outbreak Associated with Rotavirus in a Local Elementary School

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Inside the Issue

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Background

On March 9, 2015, the Florida Department of Health in Miami-Dade County Epidemiology, Disease Control & Immunization Services (EDC-IS) was notified by the Public School Comprehensive Health Services (CHS) of an outbreak of gastrointestinal illness at a local elementary school. This initial notification included a line list of 52 students and 3 staff members who were absent on March 5-6 with reported diarrhea and fever. The line list also included a student who was hospitalized with these same symptoms. The ill students were distributed throughout all grades, among 14 different classrooms. EDC-IS provided verbal recommendations on thorough hand washing, environmental cleaning of common surfaces, and separation of the ill students and staff until they were able to go home. The school has a total of 85 staff members and 536 students in grades Pre-K – 5th. EDC-IS immediately initiated an investigation.

The school absentee rates for the days preceding notification were reviewed: March 4th, 5%; March 5th, 8%; March 6th, 13%; March 9th, 8%. Absentee rates above 8% trigger a red alert. Additional line lists were provided by the school on March 10th, March 11th, and March 12th reporting a total of 67 ill students and 4 ill staff members present in all grades and in 17 different classrooms. Two additional cases in siblings who attend the same school were identified during the course of the investigation. The school informed EDC-IS that a school wide book fair and Dr. Seuss birthday celebration occurred March 2-6.

On March 9, the Environmental Health Program was notified and conducted a site visit the following day. Environmental Health did not identify any violations in the facility kitchen or bathrooms. In addition to gastrointestinal outbreak control recommendations, on March 11 EDC-IS also provided a letter for parents informing them of the outbreak and instructing them to keep ill students home.

Methods

A *confirmed* case of gastrointestinal illness was defined as a student or staff member who reported vomiting or diarrhea plus one of the following: nausea, fever, headache, abdominal pain, was present at the school during March 2-6, and had a positive laboratory result. A *probable* case was defined the same as a confirmed case, but lacked a laboratory result. EDC-IS created a questionnaire to obtain information about symptoms, onset date, grade, classroom, home or school lunch and breakfast, attendance at the book fair and Dr. Seuss celebration, and whether the medical treatment was sought. EDC-IS sought to interview 4 staff and the parents of 67 students. Interviews took place between March 9 and March 12. All data was analyzed using SAS Version 9.3.

Results

Among 71 ill students and staff, 47 were successfully contacted and interviewed. The investigation revealed 37 students (attack rate = 7%) and 3 staff members (attack rate

= 4%) met the case definition; six students and one staff member did not meet the case definition. Of the 40, 4 (10%) were confirmed cases and 36 (90%) were probable. The earliest onset was March 1 and the last known onset was March 11, with a peak on March 5. Reported symptoms included vomiting (88%), abdominal pain (80%), diarrhea (70%), fever (58%) [reported temperatures ranged from 97.3 to 103.9, median 102], nausea (33%), headache (30%), fatigue (28%), and chills (20%). Age distribution in students ranged from 4 – 11 years old (mean 10.75). Students aged 7 – 9 composed 57.5% of cases. Among staff, the mean age was 43.3. Eighty percent of cases were distributed evenly throughout grades 1-4, with grades 5, K, and Pre-K making up the remaining 20%. Two classrooms (2nd grade and mixed grades) consisted of 31% of cases, with the remaining cases distributed evenly throughout the 15 other classrooms. Reported illness duration lasted less than 6 days. Only 39% and 31% of students ate school-provided lunch or breakfast, respectively. Sixty-three percent of confirmed and probable cases attended the book fair and 52% attended the Dr. Seuss event. Fifteen ill individuals reported that at least one household member also became ill with similar symptoms.

Of the confirmed and probable cases, eight students visited an emergency department and three were admitted. Three students tested positive for rotavirus at a commercial lab. They were not tested for norovirus, but specimens were negative for parasites and other enteric infections. The Bureau of Public Health labs tested an additional specimen, which was also positive for rotavirus on March 19. This specimen was negative for norovirus and enterovirus.

Discussion

A point-source foodborne transmission seems unlikely due to the wide range in onset dates (incubation period for rotavirus is less than 48 hours), lack of ill cafeteria workers, no difference between cases and a history of eating cafeteria food, and that Environmental Health did not find any violations during their inspection (1). A limitation is that some children do not always bring food from home or eat at school every day of the week. A school-wide book fair could have facilitated person-to-person or fomite transmission, especially for those students who attended the event early in the week of March 2. Another limitation is that the majority of parents we interviewed were unsure which day their child attended the book fair and several reported multiple trips throughout the week. The Dr. Seuss Birthday Celebration occurred on different days in individual classrooms and included food brought from home by parents. This Dr. Seuss event could have also contributed to the spread of the outbreak.

The two most common symptoms associated with this outbreak were vomiting and abdominal pain, which is consistent with rotavirus infection. In this particular outbreak eight children sought care at an emergency department and three were hospitalized for several days. This reiterates the fact that rotavirus can lead to severe dehydration due to diarrhea and vomiting.

Rotavirus infection can be prevented by good hand hygiene practices, decontaminating common surfaces with a 1:64 bleach dilution, and the completion of the rotavirus vaccine series by 8 months of age.

Rotavirus vaccination statuses of the 40 ill students and staff were identified using Florida Shots. Of these 40 individuals, 5 had at least one

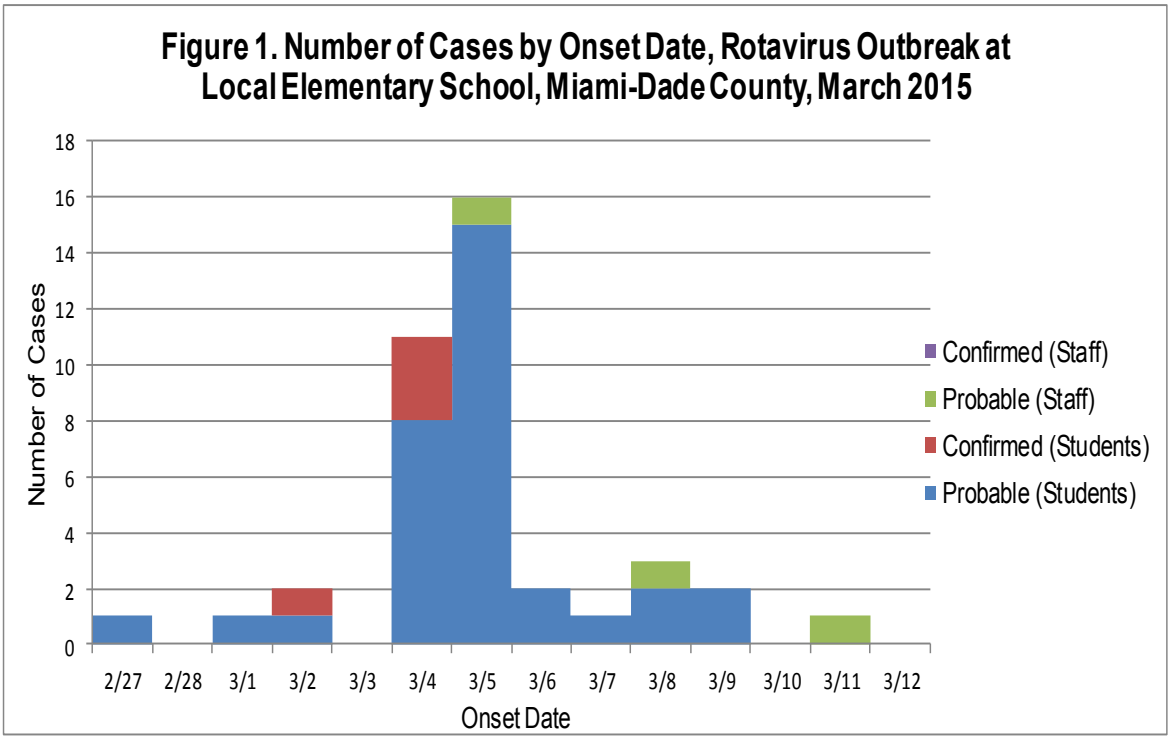
dose of the rotavirus vaccine (12.5%), 30 were unvaccinated (75%), and information for 5 was unknown (12.5%). A limitation of this data is that not all physicians use this database to record vaccination histories. Therefore, these results may be underestimating the actual vaccination coverage.

Laboratory specimens, however, were collected only from individuals who sought healthcare. For this reason, these results are not representative of the entire ill population, thus the infectious agent or agents for this outbreak cannot be officially identified.

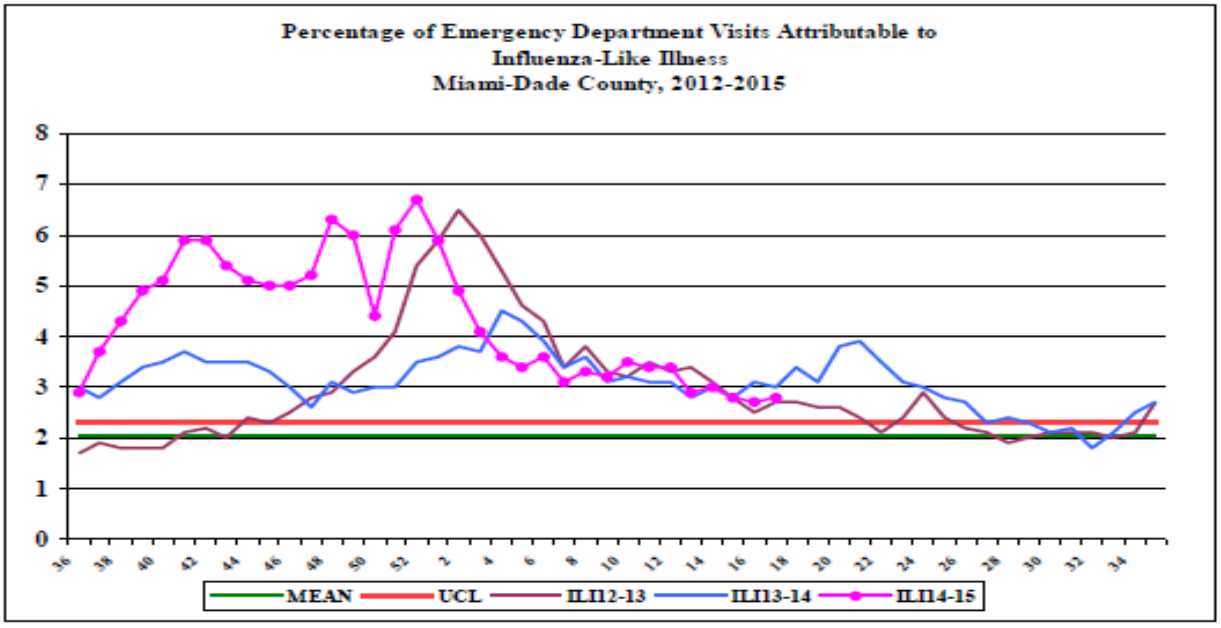
Healthcare providers should report suspected clusters of gastrointestinal illness to the Florida Department of Health in Miami-Dade at 305-470-5660 (24/7, 365).

Centers for Disease Control and Prevention (CDC), National Center for Immunization and Respiratory Diseases, Division of Viral Diseases. Retrieved from: http://www.cdc.gov/vaccines/pubs/pinkbook/rota.html#rotavirus

Figure 1. Number of Cases by Onset Date, Rotavirus Outbreak at Local Elementary School, Miami-Dade County, March 2015



Influenza-Like-Illness, All Age



During this period, there were 24,256 ED visits; among them 681 (2.8%) were ILI. At the same week of last year, 3.0% of ED visits were ILI.

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

Childhood Lead Poisoning Prevention Program 305-470-6877
Hepatitis 305-470-5536
Immunizations or outbreaks 305-470-5660
HIV/AIDS Program 305-470-6999

STD Program 305-575-5430
Tuberculosis Program 305- 575-5415

Immunization Service 305-470-5660

To make an appointment.....786-845-0550

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.

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 Emily Moore at (305) 470-6918.

Miami-Dade County Monthly Report
Select Reportable Disease/Conditions
March 2015

Diseases/Conditions	2015 Current Month	2015 Year to Date	2014 Year to Date	2013 Year to Date
HIV/AIDS				
AIDS*	41	102	113	190
HIV	136	407	339	356
STD				
Infectious Syphilis*	23	74	81	73
Chlamydia*	796	2185	2448	2412
Gonorrhea*	165	435	505	599
TB				
Tuberculosis**	12	23	22	15
Epidemiology, Disease Control & Immunization Services				
Epidemiology				
Campylobacteriosis	22	60	63	58
Chikungunya Fever	1	6	0	0
Ciguatera Poisoning	0	2	4	0
Cryptosporidiosis	4	4	6	5
Cyclosporiasis	0	0	0	1
Dengue Fever	2	4	5	8
Escherichia coli, Shiga Toxin-Producing	0	0	4	2
E. coli, Non-O157	0	0	0	0
Encephalitis, West Nile Virus	0	0	0	0
Giardiasis, Acute	26	51	52	62
Influenza Novel Strain	0	0	0	0
Influenza, Pediatric Death	0	0	1	0
Legionellosis	3	5	4	8
Leptospirosis	1	1	0	0
Listeriosis	0	0	0	0
Lyme disease	1	1	0	0
Malaria	0	0	1	5
Meningitis (except aseptic)	1	2	5	4
Meningococcal Disease	3	4	3	8
Salmonella serotype Typhy (Typhoid Fever)	1	2	0	0
Salmonellosis	23	90	100	88
Shigellosis	9	29	189	11
Streptococcus pneumoniae, Drug Resistant	0	0	19	34
Toxoplasmosis	0	0	0	0
Vibriosis	1	1	2	0
West Nile Fever	0	0	0	0
Immunization Preventable Diseases				
Measles	0	0	0	0
Mumps	0	0	0	0
Pertussis	3	5	7	8
Rubella	0	0	0	0
Tetanus	0	0	0	0
Varicella	7	10	11	28
Hepatitis				
Hepatitis A	4	5	6	7
Hepatitis B (Acute)	4	4	4	4
Lead				
Lead Poisoning	10	17	14	25

*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.