Epi Monthly Report

VOLUME 18, ISSUE 12 DECEMBER 2017

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Ciguatera in Miami-Dade County

By Xeniamaria Rodriguez

Ciguatera Fish Poisoning (CFP) is an illness caused by eating reef fish contaminated with ciguatera toxins. The odorless and colorless toxins originate in a benthic dinoflagellate plankton of the genus *Gambierdiscus* which attach themselves to algae [1,7]. The toxins are spread when small fish consume the algae and are consequently eaten by larger predatory fish, such as barracuda and snapper, which are popular for seafood consumption[5]. As a result, the toxicity concentration increases with the size of the fish, and contaminated fish have no particular taste, odor, or color difference[1,5,7]. The lack of identifying markers makes it challenging to identify and prevent consumption of contaminated fish[1,5,7].

Environment and Exacerbating factors

Gambierdiscus can be found worldwide and is endemic to tropical areas such as the Caribbean, subtropical North Atlantic and Pacific region [1,5.] Water temperature is directly related with CFP, as the optimal temperature for the growth of *Gambierdiscus* is 29°C, but is prevalent in regions where water temperature remains above 24°C [5,7]. According to NODC, water temperature in Miami Beach ranged from 22 to 27 °C this year[8]. Similarly, weather patterns and ecological disturbances such as typhoons, earthquakes, and tidal waves are considered a natural source for outbreaks of ciguatoxin[1]. Hurricane Irma's violent impact in Miami-Dade County could have potentially impacted the levels of ciguatoxins. Over the last five years, the South Florida region has had consistent outbreaks of ciguatera fish poisoning, often related recreational harvesting of fish and occasionally grocery purchases or restaurant consumption.

Symptoms, Diagnosis and Treatment

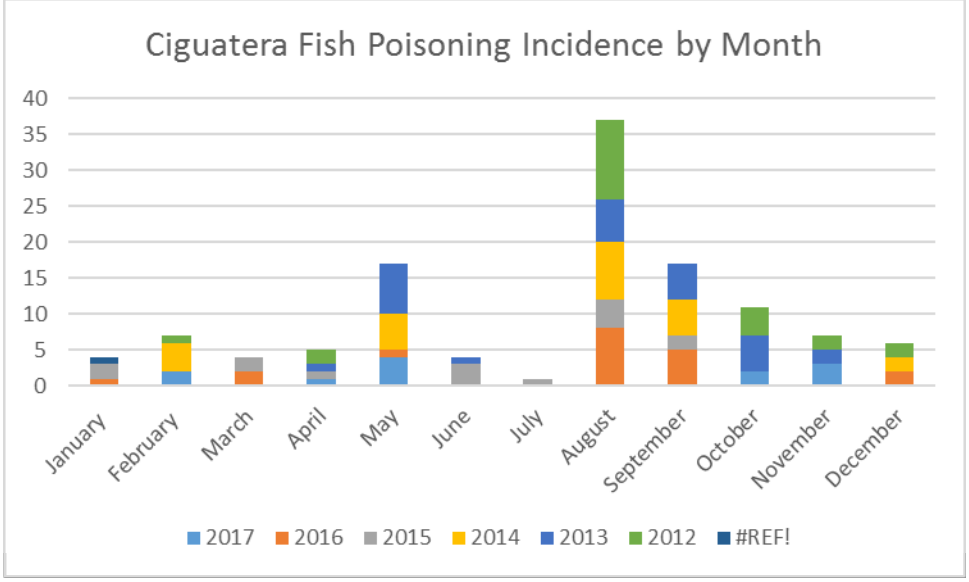
Ciguatera Fish Poisoning is contracted through consumption of contaminated fish and causes a variety clinical symptoms (Neurological, Cardiac, Gastrointestinal) [2,3]. Neurological symptoms may include joint or muscle

pain, numbness or tingling, weakness, dizziness and headaches. Similarly, some individuals report the reversal of hot and cold sensations [2,3.] Individuals may begin to experience gastrointestinal symptoms, such as vomiting, diarrhea, abdominal pain, and nausea, within 6-24 hours of eating reef fish [4]. During the beginning stages, cardiac signs such as hypotension and bradycardia may also occur [4].

There is no specific diagnostic test for CFP. However, routine laboratory tests of CFP patients may show volume depletion from fluid losses. If there are mild creatine phosphokinase and lactate dehydrogenase, it may reflect muscle tissue breakdown[2]. Treatment for CFP is primarily prescribed to manage symptoms. Symptoms can be managed with mannitol, antihistamines, and NSAIDS as well as other options[2].

Epidemiology and Case Counts

Miami-Dade County, surrounded by the ocean and coastline, attracts a variety of local fisherman as well as seafood tourism. In 2017 up to date, there were a total of 11 cases, all Hispanic individuals over the age of 30. Of these cases, 82% were male and 82% of consumed fish were recreationally harvested, while only 18% were consumed in a restaurant setting. Over the last five years, 119 Ciguatera Fish Poisoning cases have been reported in Miami-Dade County. Of these, 69% were aged 30-59, 67% of them were Hispanic, and 53% were male. 107 cases were associated with different outbreaks. Likewise, 76 cases were harvested recreationally, 31 were obtained at a grocery market and 10 were eaten in a restaurant setting. The majority of cases over the last five years occurred during the months of August, September and May (Figure 1). However, cases can occur year round and should be considered if presenting with symptoms.



Citations:

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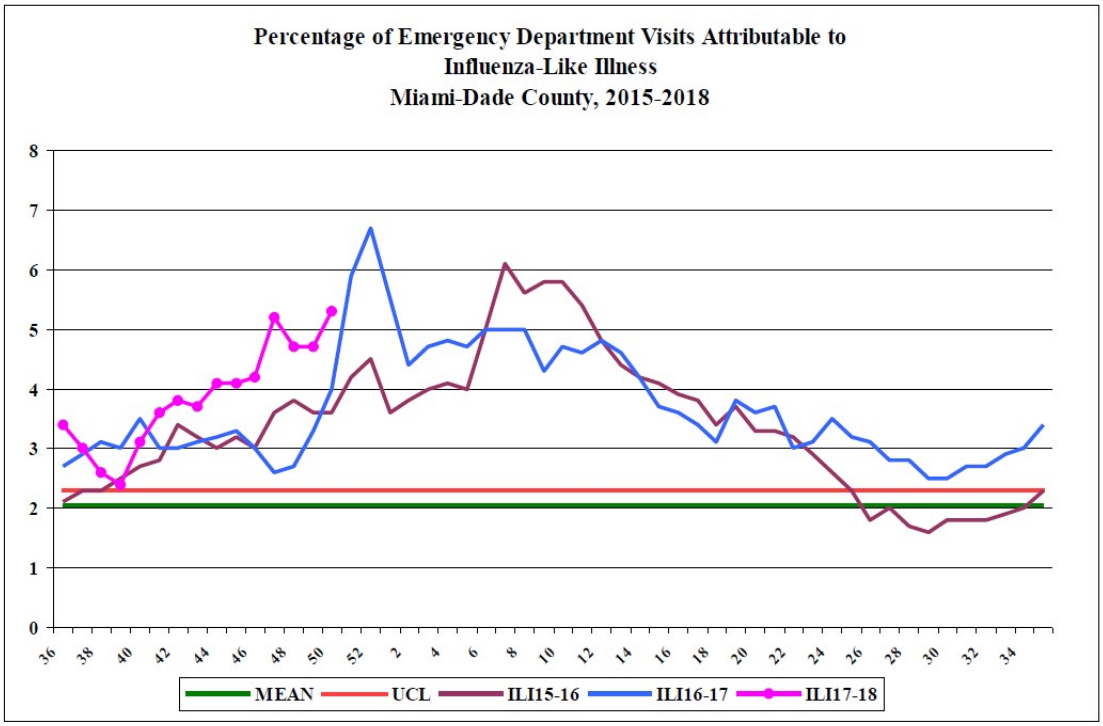
Harmful Algal Blooms: Ciguatera Fish Poisoning: Home | CDC HSB. (2017). Cdc.gov. Retrieved 19 December 2017, from https://www.cdc.gov/nceh/ciguatera/#fact

Radke, E., Reich, A., & Morris, J. (2015). Epidemiology of Ciguatera in Florida. The American Journal Of Tropical Medicine And Hygiene, 93(2), 425-432. http://dx.doi.org/10.4269/ajtmh.14-0400

Water Temperature Table of All Coastal Regions. (2017). Nodc.noaa.gov. Retrieved 19 December 2017, from https://www.nodc.noaa.gov/dsdt/cwtg/all_meanT.html

Influenza-Like-Illness, All Age



During this period, there were 31,048 ED visits; among them 1,657 (5.3%) were ILI. At the same week of last year, 4.0% 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
November 2017

Diseases/Conditions	2017 Current Month	2017 Year to Date	2016 Year to Date	2015 Year to Date
HIV/AIDS				
AIDS*	55	372	465	420
HIV	162	1184	1360	1235
STD				
Infectious Syphilis*	33	346	375	303
Chlamydia*	956	11132	10959	9706
Gonorrhea*	262	3056	2575	1975
TB				
Tuberculosis**	N/A	N/A	N/A	N/A
Epidemiology, Disease Control & Immunization Services				
Epidemiology				
Campylobacteriosis	31	604	516	598
Chikungunya Fever	0	1	0	26
Ciguatera Poisoning	0	7	14	15
Cryptosporidiosis	1	39	26	45
Cyclosporiasis	0	4	2	3
Dengue Fever	4	9	17	27
Escherichia coli, Shiga Toxin-Producing	0	23	7	17
Encephalitis, West Nile Virus	0	0	0	0
Giardiasis, Acute	5	115	179	179
Influenza Novel Strain	0	0	0	0
Influenza, Pediatric Death	0	1	0	0
Legionellosis	4	42	22	25
Leptospirosis	0	0	0	1
Listeriosis	0	7	5	6
Lyme disease	0	3	2	8
Malaria	0	5	8	7
Meningitis (except aseptic)	1	10	2	7
Meningococcal Disease	0	7	1	6
Salmonella serotype Typhy (Typhoid Fever)	0	2	1	2
Salmonellosis	57	721	675	628
Shigellosis	11	100	70	138
Streptococcus pneumoniae, Drug Resistant	0	22	5	1
Vibriosis	0	5	9	16
West Nile Fever	0	0	0	0
Immunization Preventable Diseases				
Measles	0	0	4	0
Mumps	0	4	4	3
Pertussis	2	34	22	29
Rubella	0	0	0	0
Tetanus	0	0	0	0
Varicella	4	41	68	49
Hepatitis				
Hepatitis A	7	111	40	33
Hepatitis B (Acute)	3	28	23	12
Healthy Homes				
Lead Poisoning	10	81	101	75

*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.