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Foodborne Illness Outbreak at a Birthday Party

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Background

On February 13, 2001, a group of 42 people attended a birthday party at a private residence in Miami-Dade County. On February 15, the Office of Epidemiology and Disease Control (OEDC), Miami-Dade County Health Department (MDCHD) received a fax from the Department of Business and Professional Regulation (DBPR) reporting that as many as 30 attendees could have been ill. An investigation was initiated.

Methods

Epidemiologic Methods
A case was defined as a person who attended and ate at the party and developed symptoms of at least diarrhea or cramps within 24 hours. Interviews were conducted over the phone with a designed questionnaire. The information was analyzed using Epi Info 2000 software.

Laboratory Testing
Samples of left over foods from the party were collected at the home of the hostess and sent to the Jacksonville Central Laboratory for testing. There were no clinical specimens available for testing from any of the ill patients.

Environmental Investigation
On February 15, an inspector from the DBPR visited the facility of the food caterer to observe food preparation, safety, and possible points of contamination.

Results

Epidemiologic and Laboratory Results
Of the 42 attendees, 28 (66%) could be reached. Of these 16 were ill, and 12 non-ill. The participants had a mean age of 37 years with a range of 2 to 95 years, and 15 (53%) were female. The symptom frequency is shown in table 1. The median incubation periods was 10.8 hours (range 6 to 15 hours), and the median duration was 24 hours (range 7 to 60 hours). The analysis of risk factors is shown in table 2.

There was a statistically significant association between illness and imperial rice with chicken and dessert (Fisher exact test $P<0.0001$ and $p=0.01$ respectively). All ill subjects ate the imperial rice with chicken, whereas only 14 ate the dessert. The attack rate among those that ate the imperial rice with chicken and dessert was 94% and 78% respectively.

No pathogens or toxins were identified from the food samples.

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Table 1. Frequency of Symptoms

Symptom	Frequency	%
Diarrhea	15	93.8
Cramps	12	75.0
Vomiting	2	12.5
Headache	0	0.0
Nausea	0	0.0
Fever	0	0.0
Chills	0	0.0

Table 2. Univariate Analysis of Risk Factors in The Foodborn Illness Outbreak

Food Items	Ill		Not Ill		P Value	Odds	95% C.I.	
	No.	%	No.	%		Ratio	Low	High
IRC*								
Ate	16	100.0	1	8.3	<0.0001	Infinite	-	-
Did not eat	0	0.0	11	91.7				
Green Salad								
Ate	8	50.0	2	16.7	0.08	5	0.82	30.5
Did not eat	8	50.0	10	83.3				
Soda								
Drank	8	50.0	5	41.7	0.19	1.4	0.31	6.33
Did not drink	8	50.0	7	58.3				
Dessert								
Ate	14	87.5	4	33.3	0.01	14	2.08	94.2
Did not eat	2	12.5	8	66.7				
Water								
Drank	9	64.3	3	25.0	0.05	5.4	0.98	29.7
Did not drink	5	35.7	9	75.0				
Ice								
Drank	7	50.0	7	58.3	0.18	0.71	0.15	3.38
Did not drink	7	50.0	5	41.7				

**IRC: Imperial rice with chicken*

Environmental Investigation Results

The inspection conducted by DBPR of the catering facility shows no major violations, and hot-holding temperatures at time of inspection were in the accepted range. The information from the interviews showed that products were handled properly by the consumers. The imperial rice was picked up at 4:15 pm, taken to the home (a short drive) and placed in the oven for 5 hours at 200 degrees Fahrenheit. The salad was placed in the refrigerator until ready to serve.

Conclusions and Recommendations

No pathogen was found for this outbreak of common exposure to foods. Clinical specimens were not available because the patients had recovered by the time we were notified. The illness could have been caused by *Bacillus cereus* or *Clostridium perfringens* toxin based on symptoms and incubation period. The imperial rice with chicken is the most likely vehicle based on its attack rate and that it was the one food item that all ill individuals ate. The inspection of the restaurant shows no major violations, and there were no ill food handlers. Either *C. perfringens* or *B. cereus* could have been present due to improper cooking or hot holding. However, at the time of the inspection, the facility was using proper hot holding times and temperatures. Information was provided by DBPR to the facility about Hazard Analysis of Critical Control Points (HACCP) and temperature requirements. No additional reports of illness have been received by our office.

To report diseases or for information:

Office of Epidemiology and Disease Control

Childhood lead poisoning prevention program	(305) 324-2414
Hepatitis	(305) 324-2490
Other diseases and outbreaks	(305) 324-2413
HIV/AIDS Program	(305) 377-7400
STD Program	(305) 325-3242
Tuberculosis Program	(305) 324-2470
Special Immunization Program	(305) 376-1976
Nights, weekends, and holidays	(305) 377-6751

Influenza Surveillance Update
(Week ending March 10, 2001-Week 10)

Carina Blackmore, MS, Vet. Med., PhD, Regional Epidemiologist, NE Florida

[The following article appeared in EPI UPDATE, a weekly publication by the Bureau of Epidemiology, Florida Department of Health (For March 30, 2001)]

Florida: The 2000-2001 influenza season has been mild in Florida. During week 10, only one percent of 11,679 patients seeking care by reporting physicians in the influenza sentinel surveillance program met the case definition for ILI and no influenza virus isolations were reported. From February 1 to date, more than 80% of isolates (n=23) have been influenza B. Flu B isolates have been recovered from patients in Alachua, Duval, Franklin, Hillsborough and Leon counties. Two influenza A (H1N1) isolates from Charlotte and Hillsborough counties and 2 untyped influenza A isolates from Hillsborough and Palm Beach counties have also been reported. Since October 1, 2000,132 influenza isolations have been reported to the state health office.

National report: Influenza activity seems to be declining in the United States. For the current season, the overall national percentage of respiratory specimens positive for influenza appears to have peaked at 24% at the end of January (week 4). During week 10, 6% percent (vs 12% during week 9) of the 1,464 specimens tested in WHO and NREVSS laboratories were positive for influenza. A majority of these isolates (64%) were influenza type B. The 2000-2001 flu vaccine induces reactive antibodies against all 436-virus strains that have been antigenically characterized at CDC this year.
During week 10, the state health department in Rhode Island reported widespread influenza activity, twelve state and territorial health departments reported regional influenza activity this week, a decline from 18 states reporting regional activity during week 9.
The percentage of all deaths due to P&I as reported by the vital statistics offices of 122 U.S. cities was 8.0%, which is below the epidemic threshold (8.7%) for week 10.

Two percent of patient visits to U.S. sentinel physicians during week 10 were due to influenza-like illness (ILI). The percentage of patient visits for ILI was within baseline levels (3%) in 8 of 9 surveillance regions. Influenza activity was above baseline levels (4%) in the Pacific Region.

The percentage of specimens that tested positive for Respiratory Syncytial Virus (RSV) this week ranged from 13.9% in the central part of the state to 31.4% in the northeast. Twelve Florida hospital laboratories participate in this program.

Monthly Report
Selected Reportable Diseases/Conditions in Miami-Dade County, February 2001

Diseases/Conditions	Reported Cases this Month	2001 Year to Date	2000 Year to Date	1999 Year to Date	1998 Year to Date
AIDS *Provisional	153	268	266	272	241
Campylobacteriosis	11	16	1	2	2
Chancroid	0	0	0	0	0
Chlamydia trachomatis	235	446	709	715	499
Ciguatera Poisoning	0	0	0	0	0
Cryptosporidiosis	1	3	0	0	0
Cyclosporosis	0	0	0	0	0
Diphtheria	0	0	0	0	0
E. coli , O157:H7	0	0	0	0	0
E. coli , Other	0	0	0	0	0
Encephalitis	0	0	0	0	0
Giardiasis, Acute	19	21	0	3	6
Gonorrhea	159	324	543	502	360
Granuloma Inguinale	0	0	0	0	0
Haemophilus influenzae B (invasive)	0	1	0	0	0
Hepatitis A	17	27	0	3	17
Hepatitis B	1	2	0	6	1
HIV *Provisional	104	270	276	273	293
Lead Poisoning	25	27	N/A	0	13
Legionnaire's Disease	0	0	0	0	0
Leptospirosis	0	0	0	0	0
Lyme disease	0	0	0	0	0
Lymphogranuloma Venereum	0	0	0	0	2
Malaria	5	5	0	2	2
Measles	0	0	0	0	0
Meningitis (except aseptic)	2	2	0	0	5
Meningococcal Disease	3	4	5	1	0
Mumps	0	0	0	1	0
Pertussis	0	0	0	2	4
Polio	0	0	0	0	0
Rabies, Animal	0	0	0	0	1
Rubella	0	0	0	0	0
Salmonellosis	9	20	8	13	30
Shigellosis	4	8	3	16	16
Streptococcus pneumoniae, Drug Resistant	17	17	11	2	10
Syphilis, Infectious	12	24	24	11	6
Syphilis, Other	52	97	133	184	99
Tetanus	0	0	0	0	0
Toxoplasmosis	0	0	0	0	0
Tuberculosis *Provisional	14	25	28	10	57
Typhoid Fever	0	0	0	1	1
Vibrio , *cholera*	0	0	0	0	0
Vibrio , Other	0	0	0	0	0

* Data on AIDS are 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.