



Environmental Services

TEL 919 856 7400
FAX 919 743 4772

Environmental Health & Safety Division
336 Fayetteville Street • Raleigh, NC 27602
www.wakegov.com

ILLNESS ASSOCIATED WITH EVOO RESTAURANT

APRIL 17, 2009

EVENT: Wake County EMS was dispatched around 9:00 pm April 17, 2009 to EVOO Restaurant located at 2519 Fairview Road, Raleigh, NC, to assist, treat, and possibly transport patrons that had suddenly become ill after eating. EMS indicated the initial call was for one but increased to three ill patrons that received treatment on scene prior to being transported to Duke Raleigh Hospital. Salad was thought to be the common food, based on information gathered at the scene. Restaurant management was directed by EMS to discontinue serving all salad. The City of Raleigh Fire Department also responded as a precaution to test for possible air borne agents that could have contributed to the illness. The tests were negative.

The Wake County Environmental Services on-call pager activated at 10:26 am April 18, 2009. A follow up phone call was placed to the restaurant at 10:41 am by Wake County Environmental Services on-call staffer to Robert Duffy, identified as one of the owners, who released a total of nine names. One of the names released was the chef, who was the first individual to become ill. Phone interviews followed the remainder of the morning and well into the afternoon. The number of sick individuals increased to seventeen. Everyone interviewed indicated the symptom onset was quick, violent and within twenty minutes of eating. The common food consumed was greens in some combination of salad, combination platter garnishment, or entre. Several patrons complained of muscle twitching/spasms accompanying vomiting and diarrhea.

The restaurant was advised by Wake County Environmental Services on-call staffer to remove the food from the salad cooler and any other location, place it in a neutral location where new product would not be mixed, hold it for possible testing, and thoroughly clean everything at least three times over. It was also recommended employees wear gloves to minimize the risk of self contamination,

and to use a stronger than normal chlorine to water mixture on all surfaces after everything was cleaned. The mixture suggested was one cup chlorine to one gallon water; spray and let dry.

Wake County Environmental Services staff visited the facility around 3:00pm and found the restaurant staff cleaning and sanitizing as directed. Food temperatures and storage were found to be compliant. All food from the prep coolers and the remaining unopened salad greens were removed, tagged, dated, and stored away from other foods in the walk in cooler. Wake County Communicable Disease Section was notified, along with the Environmental Health & Safety Division Director, Section Chief, and the appropriate Team Leaders.

A meeting to review the weekend events took place April 20, 2009 and phone calls were placed to NCDA, the State Lab, research labs, and private labs. A plan of action was implemented to ensure all documented information, and phone calls from the media, were funneled through the Wake County Public Information Office for release to the public. The Environmental Services Department received a call from the State Epidemiology Branch offering their assistance. A second visit to the restaurant was scheduled for April 21, 2009 to examine the work areas and the food handling practices. The FDA was contacted during that visit, and arrangements were made to have suspect foods picked up for testing. Based on symptoms, anchovies, cheese, and tuna could be implicated as a source causing the suspected illness. The remaining tuna loin was thought to be the most likely suspect of the three and was immediately placed into the freezer to retard any further suspected degradation. The FDA representative picked up the tuna from the restaurant on April 22, 2009, and also asked for the remaining anchovies for testing.

Wake County Environmental Services staff made a third visit to the establishment the evening of April 23, 2009. Food temperatures were found to be compliant. However, personal drinks, food and utensil storage found out of compliance, were corrected during the visit.

SYMPTOMS: A total of 17 individuals experienced vomiting. The following symptoms accompanied vomiting in various combinations: 10 accounts with diarrhea; 9 accounts with twitching or muscle spasms; 8 accounts with nausea; 8

accounts with dizziness; 7 accounts with sweating; 6 accounts of red face; 2 accounts with tingling tongue; 2 accounts with chills; 1 account with heavy tongue; 1 account with extremity numbness; 1 account with blurred vision; 1 account with burning sensation in soles of feet and palms of hands; 1 account with difficulty breathing; 1 account with difficulty swallowing.

FOODS: All ill patrons had salad of some sort....9 orders with mixed greens (1 to go, with no report of illness); 3 orders with Caesar salads (1 person did not get sick); 3 with spinach salad (1 person did not get sick); 3 with Greek salad; 2 with house salad. 1 order deviled eggs with Caesar dressing; 4 orders of chicken kabobs; 3 orders of calamari; 2 orders of crab cakes; 1 order of pompano fish; 2 orders of meatloaf; 1 order of eggplant; 2 orders of humus; 2 orders of cucumbers/veggies with tadzeiki sauce; 9 orders of water; 1 margarita pizza; 2 orders of pasta with chicken; 7 orders of various types of wine; 3 lamb & sausage pizza; 2 orders of artichoke dip; 2 orders of tuna; 1 draught beer; 6 orders of bread with oil & spices; 2 orders of mashed potatoes; 2 risotto dishes; 2 orders of French onion soup; 1 crusted salmon; 1 order fish special.

THEORY: Two employees are thought to be key in a possible cross contamination scenario:

1. Chef "A" is believed to have contributed to the cross contamination of the food based on his statement during two subsequent interviews of his symptom onset and handling of the food at his station. Anchovies were present at this station.
2. Chef "C" relieved chef "A" coming from another station containing raw foods requiring cooking. It is possible that he could have contributed to a cross contamination episode. Tuna was present at this station.
3. Based on the rapid symptom onset, the typical food poisoning scenario can be ruled out. Therefore, a fast acting agent such as chemical poison or toxin is suspect.

FINDINGS: On May 28, 2009, Wake County Environmental Services received laboratory evidence confirming the presence of high levels of histamine in both tuna samples and canned anchovies taken from the restaurant and tested by the US Food and Drug Administration. Histamine levels > 50 ppm have been associated with Scombroidosis in published reports. Symptoms of Scombroid

intoxication are highly consistent with the illnesses described by the seventeen patrons in this restaurant associated outbreak.

Lab results from samples voluntarily submitted to the FDA at the EVOO Restaurant show a high histamine level (96 – 116 ppm, and decomposition noted, which suggest temperature abuse) in the tuna as well as an elevated histamine level (24.2 ppm, no decomposition noted) in the canned processed ready to eat anchovies. Lab results on the tuna and anchovy samples retrieved from the U.S. Foodservice facility, by the FDA, were found to have 51 ppm and 62-84 ppm histamine levels, respectively, and no decomposition on either sample. US FOOD SERVICE voluntarily sent samples of tuna and anchovies to a New York based private lab. Histamine levels of 43.0 ppm in the anchovies and 1.8 ppm in the tuna were found.

Based on the laboratory findings, U.S. Foodservice initiated a voluntary Class 1 recall of its Monarch brand anchovies. Canned anchovies were used in salad dressings served at the restaurant on the evening of the outbreak.

CONCLUSION: The method and location suspected of how histamines or toxin could have been introduced into the food is believed to be cross contamination at the salad station. Both of the products that tested positive for high levels of histamines were present in the restaurant. Both the management and chefs reported the tuna was never in the salad prep station. They also reported there were no food contact surfaces used in the salad station from the grill station where the tuna was located. Management also stated Chef “C” took over the salad prep station for Chef “A”. However, they affirm Chef “C” never had any physical contact with the tuna or utensils used to prep the tuna.

Based on interview information, the chef unknowingly used the anchovy product of U.S. Foodservice having confirmed elevated levels of scombroid toxin. The product was physically manipulated by the chef on the salad cooler cutting board surface. Subsequent manipulation and co-mingling of the salad ingredients (nuts, cheeses, shelled boiled eggs, dressings, and other ready to eat vegetables/foods) with the residue present from the anchovies on the same surface could have rendered these items contaminated. Although interview information did not implicate the tuna being used in the salad preparation area, the laboratory results

confirmed elevated levels of histamine, and therefore, the tuna also remains suspect in this case.

FDA Food Code and NC Food Rules require the cleaning & sanitizing of surfaces between vegetables, raw potentially hazardous foods, and ready to eat foods. According to the management, the chef did wipe down the surfaces to remove the areas visibly soiled.

Wake County Environmental Services Department requires all food service facilities under its purview to follow the North Carolina Rules for Food Service Establishments, and encourages compliance with SOPs and FDA Food Code. The Department also encourages management and employees to take part in food safety training classes to ensure safe, wholesome, unadulterated food is served to the public.

However, the use of approved food equipment, proper food handling procedures, or the use of approved cleaners and sanitizer concentrations at the local restaurant level would have been ineffective at rendering this particular preformed toxin neutral.

Thomas Jumalon, RS
Food Sanitation Section, Team Leader