

Diarrheal Illness Associated with a Restaurant

March

Hennepin County

On March 22, 2013, the Minnesota Department of Health (MDH) foodborne illness hotline received a complaint of gastrointestinal illness among a group of 16 patrons who had eaten at a restaurant in Bloomington, Minnesota on March 20. The complainant reported experiencing one episode of diarrhea, profuse perspiration, and tremors 1 to 3 hours after the meal, and that five other persons in the party became ill with similar symptoms within a few hours after consuming Chilean sea bass at the restaurant. The complainant was unwilling to provide names and contact information for the other persons in her party. A City of Bloomington environmental health inspector visited the restaurant on March 22. On March 25, the MDH foodborne illness hotline received a second complaint of illness in a restaurant patron who had eaten Chilean sea bass on March 22. A full investigation was initiated on March 26.

City of Bloomington environmental health specialists visited the restaurant on March 25 to evaluate food preparation and handling procedures. Invoices for fish served at the restaurant from March 19 to March 25 were obtained.

In order to assess whether additional persons became ill from eating the Chilean sea bass, patrons who ate at the restaurant on March 20, March 21, March 22, or March 25 and whose invoice or credit card receipt showed a Chilean sea bass purchase were identified. These patrons were interviewed about food consumption and illness history by MDH staff. A case was defined as a person who ate at the restaurant and subsequently developed

diarrhea within 24 hours of the meal. Stool samples were submitted to the MDH Public Health Laboratory for bacterial and viral testing.

The Minnesota Department of Agriculture (MDA) conducted an investigation at the fish distributor. The United States Food and Drug Administration (FDA) collected a fish sample for fish identity testing.

Illness histories and exposure information were obtained from 24 individuals with meal dates from March 20 to March 25. Five (21%) individuals met the case definition. Four additional individuals reported symptoms but did not meet the case definition: two had mild gastrointestinal illness without diarrhea, one had onset of diarrhea 77 hours after the meal, and one had onset of diarrhea 2 hours after the meal but tested positive for norovirus, making it impossible for the restaurant meal to be the source of her illness. All four of these individuals were excluded from further analyses. All five cases had diarrhea, three (60%) had cramps, one (20%) had tremors, one (20%) had oily stools, and none had vomiting, fever, or blood in the stools. Among the five cases with diarrhea, four (80%) reported only one episode, and one (20%) characterized it as mild when asked about the number of stools. The five cases had meal dates of March 20 (n=1), March 21 (n=2) and March 22 (n=2). A case-control study was not possible, since patrons were selected based on having purchased Chilean sea bass.

MDH collected stool samples from two ill patrons. Both samples tested negative for bacterial pathogens, and one from a person that was excluded from analysis was positive for norovirus GII.2.

City of Bloomington environmental health specialists reviewed invoices and labels and confirmed that the fish served at the restaurant was Chilean sea bass. The restaurant ordered fresh fish 6 days a week. The fish was received at the restaurant from the distributor covered with ice. The fish was transferred to drain trays, covered with additional ice, and placed in the walk-in refrigerator. The amount of time cutting fish into fillets (outside refrigeration) was limited to less than 30 minutes, after which the fish were returned to the walk-in refrigerator. A small number of fish fillets were transferred to the cold rail for further preparation. Details regarding the preparation of the different sea bass menu items (e.g., miso sea bass, citrus sea bass, Pesto sea bass) and side dishes (e.g., mashed potatoes, wasabi mashed potatoes, coleslaw, mashed cauliflower) were also obtained.

The invoices from the fish distributor showed that the fish sold to the restaurant was Chilean sea bass. According to the distributor, the whole fish are cleaned, headed, and frozen immediately after harvest on the fishing vessel. The country of origin can vary based on the ownership of the fishing vessels. The fish distributor received the frozen fish in large totes without any further processing. Each tote contained approximately 10-15 whole fish, and each shipment consisted of approximately 15 totes. Each fish weighed approximately 80 pounds. The frozen fish were stored frozen until an order was received, when they were thawed, rinsed, portioned, and individually wrapped in food safe bags. Orders were processed in the morning and went out for delivery the same day they were processed, getting to the restaurant by 9:00 a.m. All of the Chilean sea bass supplied to the restaurant during the week of March 18 would have come from one shipment dated February 20, 2013. The fish distributor did not receive any other complaints related to Chilean sea bass despite selling several hundred pounds of the fish per day. The fish distributor had not purchased any escolar (another type of fish that can cause similar symptoms) since 2011.

The restaurant saved two 6-oz. fillets from the shipment of fish received on March 25. The FDA tested the fish for fish identity. The fish tested was identified as Antarctic toothfish (*Dissostichus mawsoni*), a close relative of the Patagonian toothfish, also known as Chilean sea bass (*Dissostichus eleginoides*). Efforts made to identify patrons who ate at the restaurant on March 25 were relatively unsuccessful, with only two non-ill persons who did not eat Chilean sea bass interviewed. Therefore, it could not be determined whether there was any illness associated with fish served on that date. The amount of fish saved by the restaurant was insufficient for marine toxin (e.g., ciguatera) testing.

This was an outbreak of diarrheal illness associated with a restaurant. The predominant clinical presentation of one diarrheal stool within a few hours of consumption and no other significant symptoms is most consistent with an etiology of escolar toxin (gempylotoxin) or a similar marine toxin. Although the records at the distributor and restaurant indicate that the fish served was Chilean sea bass, it is possible that a substitution for escolar occurred at the fishing vessel where the fishes' heads are removed, preventing fish identification at the distributor. However, this was not confirmed.