Salmonella Enteritidis Infections Associated with a Restaurant

July Hennepin County

On July 25, 2012, review of routine surveillance interviews of *Salmonella* Enteritidis pulsed-field gel electrophoresis (PFGE) subtype SE1B1 cases reported to the Minnesota Department of Health (MDH) revealed that one case had patronized a restaurant in Minneapolis on July 8, and a second case reported working as a server at the same restaurant. Review of previous SE1B1 cases identified an additional case that worked in food service at the restaurant with an illness onset in May. Hennepin County Human Services and Public Health Department (HSPHD) epidemiology and the Minneapolis Division of Environmental Health (MDEH) were contacted and an investigation was initiated.

S. Enteritidis cases are routinely interviewed about exposures and food consumption at home and at restaurants as part of routine surveillance. Interviews of *S.* Enteritidis cases with isolates that are indistinguishable by PFGE are compared to identify potential common exposures. Information gathered during routine interviews is reviewed by an MDH epidemiologist.

On July 25, MDEH sanitarians conducted an environmental assessment of the restaurant to interviewed restaurant employees, and collected credit card receipts for additional patrons from July 6 - 9 and July 18 - 22. The cases, their meal companions, and additional patrons identified through credit card receipts were interviewed by MDH and HSPHD staff about food consumption and illness history. All restaurant staff were required to submit at least two stool specimens to the MDH Public Health Laboratory.

A confirmed case was defined as a restaurant patron from whom *S.* Enteritidis SE1B1 was isolated after eating at the restaurant. Controls were restaurant patrons identified from credit card receipts who reported no gastrointestinal symptoms after eating at the restaurant.

A total of 98 restaurant patrons were interviewed. Of these, two culture-confirmed cases were identified through routine surveillance. No additional illnesses among patrons identified through credit card receipts were identified.

Both cases reported diarrhea, one reported fever, one reported cramping, and neither reported vomiting or bloody stools. Neither case was hospitalized. The meal dates for the two cases were July 8 and July 15. The cases reported incubation periods of 46.5 and 75 hours, and illness durations of 4 and 14 days.

One case reported consuming eggs benedict with corn sauce and potatoes. The other case ate yogurt with granola and a small amount of a meal companion's CSA hash which includes eggs. The small number of cases precluded a meaningful statistical analysis of food exposures.

MDEH sanitarians interviewed all 57 restaurant employees. Fifteen employees reported gastrointestinal illness since May 1, and 10 tested positive for *S.* Enteritidis SE1B1, including three employees who did not report symptoms. Employees reported illness onsets over a 3 month period, including four in May, two in June, and nine in July. Upon environmental inspection, the sanitarian noted several violations. Unpasteurized shell eggs were being used to make mayonnaise and aioli, which was used in several menu items including egg salad and potato salad. The restaurant was ordered to discontinue using unpasteurized eggs in mayonnaise and aioli produced in the restaurant.

The majority of foods served at the restaurant, including all eggs, were produced on a single farm in Plato, Minnesota associated with the restaurant. The farm had approximately 1000 laying hens. Two employees reported visiting the farm and having direct contact with baby chicks within their incubation period. The Minnesota Department of Agriculture took 17 environmental swabs from the egg laying facility; all were negative for *Salmonella*.

This was an outbreak of *S.* Enteritidis SE1B1 infections associated with eating at a restaurant in Minneapolis. The outbreak was identified through routine disease surveillance. Documented transmission to patrons occurred on July 8 and July 15. While a vehicle was not confirmed, both cases reported consuming egg containing dishes, and this PFGE pattern of *S.* Enteritidis historically been associated with eggs. Therefore eggs from the farm in Plato are the most plausible initial source of the contamination in the restaurant. However, a large number of infected food workers were also identified, and it is possible that an infected food worker served as the source of contamination for patron cases.