

***Salmonella* Heidelberg Outbreak Associated with Chicken Broccoli and Cheese
Multiple Counties, Minnesota
January – March, 2005**

Background

From January through March, 2005, the Minnesota Department of Health (MDH) Public Health Laboratory identified four isolates of *Salmonella* Heidelberg that were indistinguishable by pulsed-field gel electrophoresis (PFGE); the subtype was designated SH60. Routine interviews of the cases revealed that they had all eaten several frozen, microwavable products during the week before illness onset, including stuffed chicken products. Specifically, three of the four cases had eaten Cub Foods brand Chicken Broccoli and Cheese. An investigation was initiated.

Methods

All *Salmonella* cases reported to MDH are routinely interviewed about food consumption and other exposures as part of enteric disease surveillance in Minnesota. Epidemiologists reviewed the information gathered during the interviews of *S. Heidelberg* SH60 cases. Cases were contacted again and asked specific questions about frozen, microwavable products consumed.

A case-control study was conducted to evaluate the association of illness with stuffed chicken products. Only the cases from March were included. Controls were recruited from sequential digit phone number lists based on the case phone number.

The Minnesota Department of Agriculture (MDA) Dairy, Food, and Meat Inspection Division conducted a traceback of the Chicken Broccoli and Cheese. MDH staff found intact product at a Cub Foods store for testing. The MDA Microbiology Laboratory cultured the products for *Salmonella*, and all isolates were sent to the MDH Public Health Laboratory for PFGE subtyping.

Results

In the case-control study, both March cases reported eating Cub Foods brand Chicken Broccoli and Cheese prior to illness. None of the six controls reported eating the product (odds ratio, undefined; $p=0.04$).

The implicated product is a raw chicken product coated with a pre-browned breading that gives the appearance that it is fully cooked. The product is microwavable, though it is not pre-cooked, and the instructions were mis-read or not followed by at least two of the cases.

The fourth case had stuffed chicken products in his freezer that were purchased at the same time as product he consumed. He reported the production codes for Cub Foods brand Chicken Broccoli and Cheese (P-1358, 4365) and Chicken a la Kiev (P-1358, 5003), and staff from MDH were able to track down seven Chicken Broccoli and Cheese packages with the same production code at a local Cub Foods store. The seven products

were tested, and three were positive for *S. Heidelberg* SH60. *S. Ohio* was also isolated from one of the packages, however, no human cases of *S. Ohio* were identified. One of the cases was never reached for an additional interview, but had initially reported consuming Simek's Chicken Kiev purchased at Cub Foods. Traceback investigations with the United States Department of Agriculture Food Safety and Inspection Service (USDA-FSIS) found that this brand was produced at Aspen Foods, the same processing plant that produced the Cub Foods brand product.

The cluster of Minnesota cases was posted on PulseNet, and five isolates with indistinguishable PFGE subtypes were identified in Michigan. One of the cases with a matching isolate may have consumed Chicken Cordon Bleu from another grocery chain during the week prior to illness from another grocery chain.

On April 21, MDH issued a joint press release with MDA notifying consumers about the link between *Salmonella* cases and Chicken Broccoli and Cheese purchased at Cub Foods. USDA-FSIS also did a press release that day. Cub Foods voluntarily pulled the product from the shelf until the packaging could be clarified to alert consumers that this is a raw product.

Conclusions

This was an outbreak of *S. Heidelberg* infections caused by frozen, microwavable chicken broccoli and cheese sold at Cub Foods and processed by Aspen Foods. Four cases in Minnesota were identified. PFGE subtyping in conjunction with timely interviews of cases was critical in identifying this outbreak. The labels for the Cub Foods product were modified and the cooking instructions verified for this product. USDA-FSIS is re-evaluating the labeling requirements for this type of product.