

***Salmonella* Infantis Infections Associated with Poultry Contact**

May

Multiple counties/Multiple states

On May 21, 2012, the Minnesota Department of Health (MDH) Public Health Laboratory (PHL) identified a *Salmonella* Infantis case isolate that matched a nationwide cluster consisting of four cases from four states. This case was interviewed on May 21 and reported contact with live chicks. On May 31, a second *S. Infantis* case in Minnesota was identified through routine surveillance and also reported contact with live chicks. Both cases' isolates had indistinguishable pulsed-field gel electrophoresis (PFGE) patterns (Minnesota subtype designation SIN93). The two cases lived in different counties. An investigation was initiated.

Cases were defined as Minnesota residents who had a culture-confirmed infection with *S. Infantis* SIN93 with illness onset from April 16 through September 16. (the time frame used for the national investigation). All *Salmonella* cases reported to MDH are interviewed about food consumption, animal contact, and other potential exposures as part of enteric disease surveillance in Minnesota. Cases were also asked questions regarding the source of their live chicks.

Stool sample collection kits were sent to both case households to obtain samples from the chicks and their environment. Samples were cultured for *Salmonella*, and isolates were serotyped and subtyped by PFGE. An MDH epidemiologist contacted the feed stores where cases reportedly purchased the chicks and worked with the Minnesota Board of Animal Health to identify source hatcheries.

The two cases reported onsets of May 6 and May 14. Both cases were female, and their ages were 53 years and 79 years. Both reported diarrhea, vomiting, and cramps. One case reported a fever. Illness durations were 7 days and 17 days. Neither case was hospitalized. One case isolate was from stool and one was from urine.

A secondary *S. Infantis* SIN93 case was identified through routine surveillance. This case was female, 63 years old, and reported diarrhea, vomiting, and cramps with an illness onset of June 7. Her illness lasted 11 days, and she was hospitalized for 4 days. This case denied any live poultry contact in the 7 days prior to her illness onset. However, she was an employee of the clinical laboratory where one of the original case's specimens was cultured. The case's specimen was collected at the clinical laboratory on May 15, and the *S. Infantis* isolate was received at the MDH PHL on June 5. The secondary case could have been exposed to *S. Infantis* during her incubation period through handling of that case's specimen or resulting isolate in the clinical laboratory.

Known purchase dates for the chicks reported by the two primary cases were April 26 and May 3. Both cases purchased chicks at feed stores; one case purchased broilers and the other case purchased Cornish game hens.

Three chick fecal samples were collected from the first case household, and all three yielded *S. Infantis* SIN93. Four samples were collected from the second case household, including three fecal samples and one litter sample. The litter sample and one fecal sample yielded *S. Infantis* SIN93, and the other two fecal samples yielded *S. Kentucky*.

One feed store identified one source hatchery located in Rudd, Iowa while the other feed store identified three potential source hatcheries located in Rudd, Iowa; Bancroft, Iowa; and Lebanon, Missouri. The only hatchery that both feed stores had in common was located in Rudd, Iowa. This facility is a mail-order hatchery from which various poultry types can be delivered to private homes or agricultural feed stores in multiple states.

During the time period of the Minnesota investigation, 26 *S. Infantis* isolates of the outbreak PFGE subtype were identified in nine other states. Onset dates ranged from April 16 through September 16. Sixty-five percent of cases were female, and ages ranged from <1 to 89 years (median age, 50 years). There were seven reported hospitalizations and no reported deaths. Eleven (55%) of 20 cases with available exposure information reported contact with live poultry prior to illness onset. Nine potential source hatcheries for chicks purchased by cases in other states were identified. The national investigation traced the poultry purchases to a hatchery in Bancroft, Iowa. The Iowa Department of Health and the Iowa Department of Agriculture were informed about this outbreak and began communications with the Bancroft, Iowa hatchery.

This was an outbreak of *S. Infantis* infections associated with live chicks. Eight of the 11 cases with hatchery information could be traced back to a hatchery in Bancroft, Iowa. One Minnesota case could not directly be traced to the Bancroft, Iowa hatchery. However, it is common for hatcheries to drop-ship, a practice where one hatchery ships birds out for another hatchery that doesn't have the inventory to complete their customer's order. These drop-shipped birds are shipped under the name of the original hatchery, even though the birds actually came from another hatchery. It is possible that this occurred with the Minnesota case and cases in other states that did not trace back to the Bancroft, Iowa hatchery. Contact with poultry, particularly with young poultry, is a well-known risk factor for *Salmonella* infections in humans.