

***Salmonella* Cotham Infections Associated with Bearded Dragon Contact**

May 2012 – February 2013

Multiple counties/Multiple states

On April 15, 2014, the Minnesota Department of Health (MDH) was notified by the Centers for Disease Control and Prevention (CDC) of an outbreak of *Salmonella* Cotham and *Salmonella* Kisarawe infections linked to contact with pet bearded dragons. *S. Cotham* and *S. Kisarawe* are rare serotypes, and CDC considered all *S. Cotham* and *S. Kisarawe* cases from January 2012 through June 2014 to be part of the outbreak. An investigation was initiated in Minnesota.

Cases were defined as Minnesota residents who had a culture-confirmed infection with *S. Cotham* or *S. Kisarawe* with illness onset from January 1, 2012 through June 30, 2014 (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 routine enteric disease surveillance in Minnesota. Cases who indicate a reptile exposure prior to illness are asked to complete a supplemental questionnaire with more detailed questions regarding their reptile contact. These questions ask about the type of reptile, reptile housing, food type and source, and cage cleaning practices prior to illness, as well as whether the cases would be interested in having their reptiles tested for *Salmonella*.

There were three Minnesota *S. Cotham* cases in the national outbreak. The onset dates for the cases were May 18, 2012, July 22, 2012, and February 12, 2013. Two cases were male, and case's ages were 13, 30, and 31 years. The three cases lived in different counties. All three cases reported diarrhea. Two cases reported nausea, two reported abdominal cramping, and two reported fever (temperature >101° F). One case reported blood in their stools. One case was still recovering from illness at the time of their interview; illness durations for the two other cases were 3 days and 16 days. Two cases were hospitalized; hospitalization durations were 3 days and 6 days. One case isolate was from stool, one was from blood, and one was from urine. The Minnesota cases all had different pulsed-field gel electrophoresis (PFGE) patterns: COT5, COT6, and COT8.

Two of the three Minnesota cases reported contact with bearded dragons. One of the cases reported daily contact with the pet bearded dragon that he owned; this case agreed to submit samples from his reptile at the time of his interview in 2012 but the samples were never returned to MDH. The other case reporting bearded dragon contact was an employee at Pet Store Chain A that had many other reptile exposures in addition to bearded dragon contact.

During the national investigation, 160 *S. Cotham* and 6 *S. Kisarawe* isolates were identified in 36 states. Of the 115 cases with onset information available, onset dates ranged from February 20, 2012 through June 30, 2014. Fifty-five percent of cases were female, and ages ranged from <1 to 79 years (median age, 3 years). Fifty-nine percent of ill persons were children aged 5 years or younger. Among 118 ill persons with available information, 44 (37%) were hospitalized. No deaths were reported. Eighty-six (83%) of 104 persons with available exposure information reported contact with reptiles or their environments before becoming ill. Of 74 persons specifically mentioning the type of lizard, 71 (96%) reported contact with bearded dragons.

Through a traceback investigation, multiple potential bearded dragon breeders were identified that supply lizards to stores in the United States where ill persons reported purchasing their animals. Environmental and reptile samples were collected during investigations at multiple domestic and international bearded dragon breeding operations and at a large national pet retail chain. A total of 454 samples were obtained, of which 320 (71%) yielded *Salmonella*. Of 291 *Salmonella* isolates serotyped, 46 (16%) yielded *S. Cotham* and 23 (8%) yielded *S. Kisarawe*.

This was an outbreak of *S. Cotham* infections associated with bearded dragon contact. Traceback investigations identified multiple bearded dragons that supply to United States pet stores. Contact with reptiles is a well-known risk factor for *Salmonella* infections in humans.