

Salmonella

Multistate Outbreak of Human *Salmonella* Typhimurium Infections Linked to Frozen Feeder Rodents

Posted May 20, 2014 1:00 PM ET

At a Glance:

- **Case Count:** 37 (</salmonella/typhimurium-rodents-05-14/epi.html>)
- **States:** 18 (</salmonella/typhimurium-rodents-05-14/map.html>)
- **Deaths:** 0
- **Hospitalizations:** 15%
- **Recall:** No

More Information:

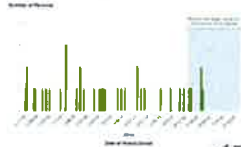
- [Advice to Pet Owners \(/salmonella/typhimurium-rodents-05-14/advice-pet-owners.html\)](/salmonella/typhimurium-rodents-05-14/advice-pet-owners.html)
- [Signs & Symptoms \(/salmonella/typhimurium-rodents-05-14/signs-symptoms.html\)](/salmonella/typhimurium-rodents-05-14/signs-symptoms.html)
- [Key Resources \(/salmonella/typhimurium-rodents-05-14/key-resources.html\)](/salmonella/typhimurium-rodents-05-14/key-resources.html)

Latest Case Count Map



[Click map to view updated & previous case count maps. \(/salmonella/typhimurium-rodents-05-14/map.html\)](/salmonella/typhimurium-rodents-05-14/map.html)

Latest Epi Curve



[Click graph to view updated & previous epi curve graphs. \(/salmonella/typhimurium-rodents-05-14/epi.html\)](/salmonella/typhimurium-rodents-05-14/epi.html)

Highlights

- **Read the Advice to Pet Owners»** (</salmonella/typhimurium-rodents-05-14/advice-pet-owners.html>)
- As of May 13, 2014, a total of 37 persons infected with the outbreak strain of *Salmonella* Typhimurium have been reported from 18 states since January 11, 2014.
 - 15% of ill persons have been hospitalized, and no deaths have been reported.
- Epidemiologic, laboratory, and traceback findings have linked this outbreak of *Salmonella* infections to contact with frozen feeder rodents packaged by Reptile Industries, Inc.
 - Feeder rodents may include mice, rats, or other rodents of different sizes and ages. Feeder rodents are used to feed some pet reptiles and amphibians.
 - Testing conducted by the Oregon State Public Health Laboratory isolated the outbreak strain of *Salmonella* Typhimurium in one sample of unused frozen mice, packaged by Reptile Industries, Inc., taken from an ill person's home in Oregon.
 - Testing conducted by the U.S. Food and Drug Administration (FDA) identified the outbreak strain in two frozen feeder rodent samples collected during an FDA investigation at the Reptile Industries, Inc. facility.
- On May 20, 2014, FDA issued a [warning](http://www.fda.gov/Food/RecallsOutbreaksEmergencies/Outbreaks/ucm397628.htm) (<http://www.fda.gov/Food/RecallsOutbreaksEmergencies/Outbreaks/ucm397628.htm>) [to pet owners who have purchased frozen rodents packaged by Reptile Industries, Inc. since January 11, 2014, advising that these products have the potential to be contaminated with *Salmonella*.](http://www.cdc.gov/Other/disclaimer.html)
 - Reptile Industries, Inc. packages frozen rodents for PetSmart stores nationwide and are sold under the brand name Arctic Mice.
- CDC recommends that pet owners do not use frozen rodents packaged by Reptile Industries, Inc. purchased since January 11, 2014.
- Contact with both live and frozen feeder rodents can be a source of human *Salmonella* infections. You should always wash your hands thoroughly with soap and water right after touching feeder rodents, whether frozen or live.
 - [Additional recommendations are available \(/healthypets/publications/index.html\).](/healthypets/publications/index.html)

Initial Announcement

May 20, 2014

CDC is collaborating with public health officials in many states, the U.S. Food and Drug Administration [Coordinated Outbreak Response and Evaluation Network](http://www.fda.gov/Food/RecallsOutbreaksEmergencies/Outbreaks/ucm349222.htm) (<http://www.fda.gov/Food/RecallsOutbreaksEmergencies/Outbreaks/ucm349222.htm>) [to](#)

(<http://www.cdc.gov/Other/disclaimer.html>) (FDA CORE), and the FDA [Center for Veterinary Medicine](http://www.fda.gov/AboutFDA/CentersOffices/OfficeofFood/CVM/default.htm) (<http://www.fda.gov/AboutFDA/CentersOffices/OfficeofFood/CVM/default.htm>) & (<http://www.cdc.gov/Other/disclaimer.html>) (FDA CVM) to investigate an outbreak of human *Salmonella* Typhimurium infections linked to contact with frozen feeder rodents used to feed pet reptiles. FDA CVM is the regulatory authority for animal feeds (which includes pet food), animal drugs, and veterinary devices.

Public health investigators are using the [PulseNet](http://pulsenet/index.html) ([/pulsenet/index.html](http://pulsenet/index.html)) system to identify cases of illness that may be part of this outbreak. PulseNet, the national subtyping network of public health and food regulatory agency laboratories coordinated by CDC, obtains DNA "fingerprints" of *Salmonella* bacteria through diagnostic testing with pulsed-field gel electrophoresis, or PFGE, to identify cases of illness that may be part of this outbreak. This PFGE pattern has been seen before in PulseNet and in the past typically caused 4-8 cases per month during January to April.

A total of 37 persons infected with the outbreak strain of *Salmonella* Typhimurium have been reported from 18 states from January 11, 2014 to May 13, 2014. The number of ill persons reported from each state is as follows: Alabama (1), Arizona (2), California (7), Illinois (1), Kentucky (1), Maryland (1), Michigan (2), Minnesota (1), Missouri (2), Montana (3), New Jersey (3), New Mexico (1), North Carolina (1), Ohio (4), Oregon (2), Pennsylvania (3), South Dakota (1), and Texas (1).

Among 32 persons with available information, dates that illnesses began range from January 11, 2014 to April 21, 2014. Ill persons range in age from younger than 1 year to 69 years, with a median age of 21 years. Fifty-nine percent of ill persons are female. Among 34 persons with available information, 5 (15%) report being hospitalized. No deaths have been reported.

This outbreak can be visually described with a chart showing the number of persons who became ill each day. This chart is called an [epidemic curve or epi curve](http://foodsafety/outbreaks/investigating-outbreaks/epi-curves.html) ([/foodsafety/outbreaks/investigating-outbreaks/epi-curves.html](http://foodsafety/outbreaks/investigating-outbreaks/epi-curves.html)). Illnesses that began after April 13, 2014 might not yet be reported due to the time it takes between when a person becomes ill and when the illness is reported. This takes an average of 2 to 4 weeks. Please see the [Timeline for Reporting Cases of Salmonella Infection](http://salmonella/outbreaks/reporting_timeline.html) ([/salmonella/outbreaks/reporting_timeline.html](http://salmonella/outbreaks/reporting_timeline.html)) for more details.

Investigation of the Outbreak

Epidemiologic, laboratory, and traceback investigations conducted by officials in local, state, and federal public health, veterinary, agriculture, and regulatory agencies indicate that contact with frozen feeder rodents used to feed pet reptiles is a likely source of this outbreak of human *Salmonella* Typhimurium infections. Frozen feeder rodents may include mice, rats, or other rodents of different sizes and ages. Frozen feeder rodents are used to feed some pet reptiles and amphibians.

In interviews, ill persons answered questions about foods eaten and animal contact during the week before becoming ill. Twenty-one (66%) of 32 ill persons interviewed reported contact with multiple types of reptiles, including snakes and lizards. Seventeen of the 21 ill persons reporting reptile exposure were able to provide information about what the reptile was fed. Fifteen (88%) of these 17 ill persons reported exposure to frozen feeder rodents.

The Oregon State Public Health Laboratory isolated the outbreak strain of *Salmonella* Typhimurium in one sample of unused frozen mice, packaged by Reptile Industries, Inc. and sold under the brand name Arctic Mice at PetSmart, collected by the Oregon Department of Public Health from an ill person's home.

FDA has evaluated sales and shipping records, and traceback activities have identified Reptile Industries, Inc. as the common source of frozen feeder rodents purchased by ill persons. Testing conducted by FDA isolated the outbreak strain in two samples of frozen feeder rodents collected during an FDA investigation at the Reptile Industries facility.

In the absence of a voluntary recall from Reptile Industries, Inc., FDA issued a warning to pet owners who have purchased frozen rodents packaged by Reptile Industries, Inc. since January 11, 2014 that they have the potential to be contaminated with *Salmonella*. Reptile Industries, Inc. packages frozen rodents for PetSmart stores nationwide and are sold under the brand name Arctic Mice.

CDC's National Antimicrobial Resistance Monitoring System

(<http://www.fda.gov/animalveterinary/safetyhealth/antimicrobialresistance/nationalantimicrobialresistancemonitoringsystem/ucm059089.htm>) & (<http://www.cdc.gov/Other/disclaimer.html>) (<http://www.cdc.gov/Other/disclaimer.html>) (NARMS) laboratory conducted antibiotic resistance testing on *Salmonella* Typhimurium isolates collected from three ill persons infected with the outbreak strain; all isolates were pansusceptible (susceptible to all antibiotics on the NARMS panel). NARMS is a U.S. public health surveillance system that tracks antibiotic resistance in foodborne and other enteric bacteria found in people, raw meat and poultry, and food-producing animals. NARMS is an interagency partnership among CDC, FDA, the U.S. Department of Agriculture (USDA), and state and local health departments. The [NARMS human surveillance program at CDC](http://www.cdc.gov/narms/) (<http://www.cdc.gov/narms/>) monitors antibiotic resistance in *Salmonella* and several other bacteria isolated from clinical specimens and submitted to NARMS by public health laboratories.

CDC and state and local public health partners are continuing laboratory surveillance through PulseNet to identify additional ill persons and to interview ill persons about foods eaten and animals they had contact with before becoming ill.

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Content source: Centers for Disease Control and Prevention

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