

Outbreak of Multidrug-Resistant *Salmonella* Infections Linked to Contact with Pig Ear Dog Treats



Investigation Notice

Published on July 3, 2019 at 2:45 PM ET

CDC, public health and regulatory officials in several states, and the U.S. Food and Drug Administration ([FDAexternal icon](#)) are investigating a multistate outbreak of multidrug-resistant *Salmonella* I 4,[5],12:i:- infections linked to contact with pig ear dog treats.

Latest Outbreak Information

At A Glance

- [Reported Cases](#): 45
 - [States](#): 13
 - Hospitalizations: 12
 - Deaths: 0
- Forty-five people infected with the outbreak strain of *Salmonella* I 4,[5],12:i:- have been reported from 13 states.
 - Twelve ill people have been hospitalized. No deaths have been reported.
 - [Epidemiologic evidence](#) indicates that contact with pig ear dog treats is the likely source of this outbreak.
 - In interviews, 34 (89%) of 38 ill people reported contact with a dog before getting sick.
 - Of 24 people with available information, 17 (71%) reported contact with pig ear dog treats or with dogs who were fed pig ear dog treats.
 - Officials from the Michigan Department of Agriculture and Rural Development gathered pig ear dog treats at retail locations where ill people reported buying the products. They sampled pig ears for *Salmonella*. Although the outbreak strain was not identified, other strains of *Salmonella* were. Investigators are checking to see if any human illnesses are linked to those strains. Retail locations where sampling occurred have removed pig ears from shelves.

- A common supplier of pig ear treats in this outbreak has not been identified. Pet owners can take [steps to keep their families healthy while feeding pets](#).
- This investigation is ongoing, and CDC will provide updates when more information is available.

Advice to Dog Owners

- **Tips to stay healthy while feeding your dog**
 - Always wash your hands thoroughly with soap and water right after handling pet food or treats, including pig ears.
 - When possible, store pet food and treats away from where human food is stored or prepared and away from the reach of young children.
 - Don't use your pet's feeding bowl to scoop food. Use a clean, dedicated scoop, spoon, or cup.
 - Always follow any storage instructions on pet food bags or containers.
- **Play safely**
 - Don't let your pet lick your mouth or face after it eats pet food or treats.
 - Don't let your pet lick any open wounds or areas with broken skin.
 - If you do play with your pet after it has just eaten, wash your hands and any part of your body it licked with soap and water.
- **Shop safely**
 - Always wash your hands thoroughly with soap and water after touching unpackaged pet treats, such as food or treats in bulk bins.
- **Take extra care around young children**
 - Children younger than 5 years old should not touch or eat pet food or treats.
 - Young children are at risk for illness because their immune systems are still developing and because they are more likely than others to put their fingers or other items into their mouths.
 - Adults should supervise handwashing for young children
- **How do I know if my dog has *Salmonella* infection?**
 - Some dogs may have *Salmonella* infection but may not look sick. Dogs with a *Salmonella* infection usually have diarrhea that may contain blood or mucus. Affected animals may seem more tired than usual, and may have a fever or vomit.
 - If your dog or cat has these signs of illness or you are concerned that your pet may have *Salmonella* infection, please contact your pet's veterinarian.
- See our [Pet Food Safety Infographic](#) for more tips on staying healthy while caring for pets.

July 3, 2019

CDC, public health and regulatory officials in several states, and the U.S. Food and Drug Administration (FDA) are investigating a multistate outbreak of multidrug-resistant *Salmonella* I 4,[5],12:i:- infections linked to contact with pig ear dog treats.

Public health investigators are using the [PulseNet](#) system to identify illnesses that may be part of this outbreak. PulseNet is the national subtyping network of public health laboratories coordinated by CDC. DNA fingerprinting is performed on *Salmonella* bacteria isolated from ill people by using standardized laboratory and data analysis techniques called [pulsed-field gel electrophoresis](#) (PFGE) and [whole genome sequencing](#) (WGS). CDC PulseNet manages a national database of these DNA fingerprints to identify possible outbreaks. WGS gives a more detailed DNA fingerprint than PFGE. WGS showed that bacteria isolated from ill people were closely related genetically. This means that people in this outbreak are more likely to share a common source of infection.

As of July 2, 2019, a total of 45 people infected with the outbreak strain of *Salmonella* I 4,[5],12:i:- have been reported from 13 states. A list of the states and the number of cases in each can be found on the [Map of Reported Cases page](#).

Illnesses started on dates ranging from [November 18, 2018, to June 13, 2019](#). Ill people range in age from less than 1 year to 81 years, with a median age of 23. Half (50%) of ill people are female. Of 39 ill people with information available, 12 (31%) have been hospitalized. No deaths have been reported.

Illnesses 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](#) for more details.

Whole genome sequencing analysis of *Salmonella* isolates from 30 ill people predicted antibiotic resistance or decreased susceptibility to ampicillin, ciprofloxacin, gentamicin, nalidixic acid, streptomycin, sulfisoxazole, tetracycline, and trimethoprim-sulfamethoxazole. Testing of one clinical isolate using standard [antibiotic susceptibility testing](#) methods by CDC's [National Antimicrobial Resistance Monitoring System \(NARMS\)](#) provided comparable results. These antibiotic-resistant infections may be difficult to treat with commonly recommended antibiotics, and may require a different antibiotic choice.

Investigation of the Outbreak

[Epidemiologic evidence](#) indicates that contact with pig ear dog treats is the likely source of this outbreak.

In interviews, ill people answered questions about animal contact in the week before they became ill. Thirty-four (89%) of 38 ill people reported contact with a dog before getting sick. Of 24 people with available information, 17 (71%) reported contact with pig ear dog treats or with dogs who were fed pig ear dog treats. Both of these proportions are significantly higher than the results from a survey of healthy people who reported contact with dogs (61%) or handling dog treats, such as pig ears (16%), in the week before interview.

Officials from the Michigan Department of Agriculture and Rural Development gathered pig ear dog treats at retail locations where ill people reported buying the products. They sampled pig ears for *Salmonella*. Although the outbreak strain was not identified, other strains of *Salmonella* were. Investigators are checking to see if any human illnesses are linked to those strains. Retail locations where sampling occurred have removed pig ears from shelves.

A common supplier of pig ear dog treats has not been identified. Pet owners can take [steps to keep their families healthy while feeding pets](#).

This investigation is ongoing, and CDC will provide updates when more information is available.

Symptoms of *Salmonella* Infection

- Most people infected with *Salmonella* develop diarrhea, fever, and stomach cramps 12 to 72 hours after being exposed to the bacteria.
- The illness usually lasts 4 to 7 days, and most people recover without treatment.
- In some people, the illness may be so severe that the patient needs to be hospitalized. *Salmonella* infection may spread from the intestines to the bloodstream and then to other places in the body.
- Children younger than 5 years, pregnant women, adults 65 and older, and people with weakened immune systems are more likely to have a severe illness.