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# Multistate Outbreak of *Salmonella* Paratyphi B variant L(+ tartrate(+)) Infections

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Posted May 21, 2015 5:00 PM ET

## Highlights

- **Read the Advice to Restaurants, Retailers, and Consumers »**
- As of May 21, 2015, a total of 53 people infected with the outbreak strain of *Salmonella* Paratyphi B variant L(+ tartrate(+)) have been reported from nine states.
  - Ten ill people have been hospitalized. No deaths have been reported.
- This outbreak is caused by *Salmonella* Paratyphi B variant L(+ tartrate(+)) bacteria.
  - The illness caused by this bacteria typically includes diarrhea, fever, and abdominal cramps 12-72 hours after an exposure.
  - *Salmonella* Paratyphi B variant L(+ tartrate(+)) does not cause paratyphoid fever, enteric fever, or typhoid fever.
- The investigation has not conclusively identified the source of this outbreak, but most ill people interviewed reported eating sushi made with raw tuna in the week before becoming ill.
  - In interviews, 34 (94%) of 36 ill people reported eating sushi made with raw tuna in the week before becoming ill.
  - At this time, a common brand or supplier of raw tuna linked to illnesses has not been identified, and there are no specific steps for restaurants, retailers, or consumers to take to protect their customers or themselves.
- People at higher risk for serious foodborne illness should not eat any raw fish or raw shellfish  
(<http://www.fda.gov/Food/FoodborneIllnessContaminants/BuyStoreServeSafeFood/ucm07>) regardless of an ongoing outbreak. These groups include:
  - Children younger than 5 years
  - Adults older than 65 years
  - Pregnant women
  - People with weakened immune systems.

- This investigation is evolving. CDC will provide updates when more information is available.

## Initial Announcement

May 21, 2015

CDC is collaborating with public health officials in several states and the U.S. Food and Drug Administration (FDA) to investigate a multistate outbreak of *Salmonella* Paratyphi B variant L(+) tartrate(+) infections. The investigation has not conclusively identified the source of this outbreak, but most ill people interviewed reported eating sushi made with raw tuna in the week before becoming ill. The investigation is ongoing and has not identified a common brand or supplier of raw tuna linked to illnesses.

This outbreak is caused by *Salmonella* Paratyphi B variant L(+) tartrate(+) bacteria. The illness caused by this bacteria typically includes diarrhea, fever, and abdominal cramps 12-72 hours after being exposed. *Salmonella* Paratyphi B variant L(+) tartrate(+) does not cause paratyphoid fever, enteric fever, or typhoid fever.

Public health investigators are using the [PulseNet \(http://www.cdc.gov/pulsenet/\)](http://www.cdc.gov/pulsenet/) system to identify illnesses that may be part of this outbreak. PulseNet is the national subtyping network of public health and food regulatory agency laboratories coordinated by CDC. DNA "fingerprinting" is performed on *Salmonella* bacteria isolated from ill people by using a technique called [pulsed-field gel electrophoresis \(http://www.cdc.gov/pulsenet/pathogens/pfge.html\)](http://www.cdc.gov/pulsenet/pathogens/pfge.html), or PFGE. PulseNet manages a national database of these DNA fingerprints to identify possible outbreaks. This PFGE pattern has never been seen before in the PulseNet database.

As of May 21, 2015, a total of 53 people infected with the outbreak strain of *Salmonella* Paratyphi B variant L(+) tartrate(+) have been reported from 9 states. Most of the ill people have been reported from the southwestern United States, or reported travel to this part of the country in the week before they became ill. The number of ill people reported from each state is as follows: Arizona (10), California (31), Illinois (1), Mississippi (1), New Mexico (6), South Dakota (1), Virginia (1), Washington (1), and Wisconsin (1).

Illness onset dates range from March 5, 2015 to May 3, 2015. Ill people range in age from younger than 1 to 83 with a median age of 31, and 47% are female. Among 46 people with available information, 10 (22%) have been hospitalized, and no deaths have been reported.

This outbreak can be illustrated with a chart showing the number of people who became ill each day. This chart is called an epidemic curve or epi curve. Illnesses that occurred after April 21, 2015 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.

## Investigation of the Outbreak

In interviews, ill people answered questions about foods eaten and other exposures in the week before they became ill. Interviews conducted to date suggest consumption of sushi made with raw tuna as a possible source of the infections. Of 37 ill people for whom information is known, 36 (97%) reported consuming sushi in the week before they became ill. This proportion is significantly higher when compared with results from a survey

[PDF - 29 pages] of healthy people in which 5% reported eating "sushi, sashimi, or ceviche made with raw fish or shellfish" in the 7 days before they were interviewed. Of the 36 people reporting eating sushi, 34 (94%) reported eating a sushi item containing raw tuna, and 21 (81%) of 26 with information reported eating a sushi item containing raw "spicy tuna."

Investigating clusters of illnesses can provide critical clues about the source of an outbreak. In this investigation, state and local officials have identified five clusters where ill people ate sushi at the same establishments. A cluster of illnesses is defined as more than one unrelated ill person (i.e., they do not know or live with each other) who report eating at the same restaurant location, attending a common event, or shopping at the same location of a grocery store before becoming ill. If several unrelated ill people ate or shopped at the same location of a restaurant or store within several days of each other, it suggests that the contaminated food item was served or sold there. Also, records kept at these locations may make it easier to trace suspected food items to identify a common point of contamination. State and local officials, along with FDA, are investigating these clusters to help identify a common brand or supplier of raw tuna possibly linked to this outbreak.

CDC and state and local public health partners are continuing laboratory surveillance through PulseNet (<http://www.cdc.gov/pulsenet/>) to identify additional ill people and to interview them about foods they ate before they became ill. This investigation is evolving. CDC will provide updates when more information is available.

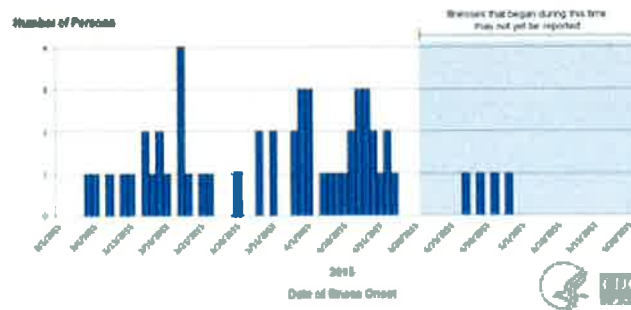
## At A Glance

- Case Count: 53
- States: 9
- Deaths: 0

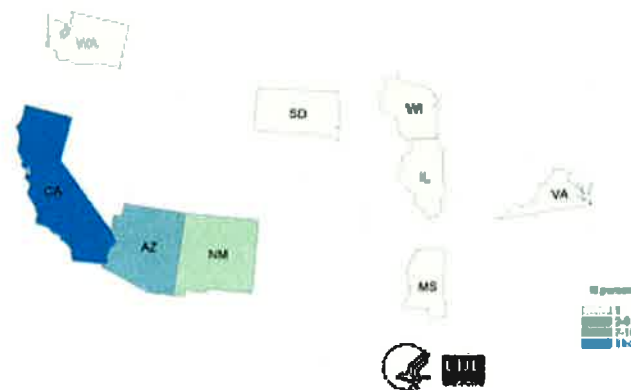
- Hospitalizations: 10

## More Information

- Advice to Retailers & Consumers
- Signs & Symptoms
- Key Resources



[CLICK TO VIEW EPI CURVE GRAPHS](#)



[CLICK TO VIEW CASE COUNT MAP](#)

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How do I view different file formats (PDF, DOC, PPT, MPEG) on this site?  
(<http://www.cdc.gov/Other/plugins/>)

(<http://www.cdc.gov/Other/plugins/#pdf>)

Page last reviewed: May 21, 2015

Page last updated: May 21, 2015

Content source: Centers for Disease Control and Prevention (<http://www.cdc.gov/>)

National Center for Emerging and Zoonotic Infectious Diseases (NCEZID) (</ncezid/index.html>)

Division of Foodborne, Waterborne, and Environmental Diseases (DFWED) (</ncezid/dfwed/index.html>)