Salmonella Outbreaks Linked to Backyard Poultry

Investigation Notice

Posted July 20, 2023

Public health officials are investigating multistate outbreaks of *Salmonella* linked to contact with backyard poultry. Any backyard poultry can carry *Salmonella* germs that can make you sick. Always take steps to stay healthy around your flock.

Fast Facts

- Illnesses: 690 (280 new)
- Hospitalizations: 141 (57 new)
- Deaths: 0
- States: 47 and Puerto Rico (3 new)
- Investigation status: Active (first posted on May 19, 2023)

Backyard Poultry and *Salmonella*

Backyard poultry, like chickens and ducks, can carry *Salmonella* germs even if they look healthy and clean. These germs can easily spread to anything in the areas where the poultry live and roam.

You can get sick from touching your backyard poultry or anything in their environment and then touching your mouth or food and swallowing *Salmonella* germs.

What Backyard Flock Owners Should Do

- **Wash your hands**
  - Always wash your hands with soap and water immediately after touching backyard poultry, their eggs, or anything in the area where they live and roam.
  - Use hand sanitizer if soap and water are not readily available. Consider keeping hand sanitizer at your coop.
- **Be safe around backyard flocks**

    - Don’t kiss or snuggle backyard poultry, and don’t eat or drink around them. This can spread *Salmonella* germs to your mouth and make you sick.
    - Keep your backyard flock and supplies you use to care for them (like feed containers and shoes you wear in the coop) outside of the house. You should also clean the supplies outside the house.
- **Supervise kids around flocks**
    - Always supervise children around backyard poultry and make sure they wash their hands properly afterward.
    - Don’t let children younger than 5 years touch chicks, ducklings, or other backyard poultry. Young children are more likely to get sick from germs like *Salmonella*.
    - Backyard poultry should not be kept in schools, childcare centers, and other facilities with children younger than 5 years old.
- **Handle eggs safely**
    - Collect eggs often. Eggs that sit in the nest can become dirty or break.
    - Throw away cracked eggs. Germs on the shell can more easily enter the egg through a cracked shell.
    - Rub off dirt on eggs with fine sandpaper, a brush, or a cloth. Don’t wash eggs because colder water can pull germs into the egg.
    - Refrigerate eggs to keep them fresh and slow the growth of germs.
    - Cook eggs until both the yolk and white are firm, and cook egg dishes to an internal temperature of 160°F to kill all germs.

Call your healthcare provider right away if you have any of these severe symptoms:

- Diarrhea and a fever higher than 102°F
- Diarrhea for more than 3 days that is not improving
- Bloody diarrhea
- So much vomiting that you cannot keep liquids down
- Signs of dehydration, such as:
    - Not peeing much
    - Dry mouth and throat
    - Feeling dizzy when standing up

What Stores Selling Backyard Poultry Should Do

- **Source poultry from hatcheries that take steps to reduce *Salmonella* contamination.**
    - These hatcheries include those that have adopted the U.S. Department of Agriculture's (USDA's) best management practices to mitigate *Salmonella* contamination [PDF – 25 pages] and those that voluntarily participate in the USDA National Poultry Improvement Plan (USDA-NPIP) U.S. *Salmonella* Monitored Program [PDF – 17 pages].
- **Clean and sanitize poultry display areas between shipments of new poultry.**
    - Be sure to remove dirt by cleaning first. Then apply disinfectant on the surface for the proper contact time recommended on the disinfectant label.
- **Help keep your customers healthy.**
    - Provide handwashing stations or hand sanitizers next to poultry display areas and tell customers to wash hands right after leaving these areas.
    - Display poultry out of reach of customers, especially children, so they cannot easily touch the poultry.
    - Provide health information to owners and potential buyers of poultry before purchase. This informational poster [PDF – 1 page] describes ways to stay healthy with backyard flocks. Place it right beside flock display areas, and hand it out to customers.
- **Learn more about how to protect your customers and employees from *Salmonella* and other diseases shared between animals and humans.**
    - Read the Compendium of Measures to Prevent Zoonotic Diseases Associated with Non-Traditional Pets.

What Poultry Hatcheries Should Do

- **Use best management practices [PDF – 25 pages]** to help prevent *Salmonella* in poultry.
- **Participate in the voluntary USDA-NPIP U.S. *Salmonella* Monitored Program [PDF – 17 pages]** and certify that your flocks are monitored for *Salmonella* germs.

- **Provide health information to owners and potential buyers of poultry before purchase**. This informational poster [PDF – 1 page] describes ways to stay healthy with backyard flocks.
  This graphic can be printed as a sticker and placed on poultry shipping boxes.

Symptoms of *Salmonella*

- Most people infected with *Salmonella* experience diarrhea, fever, and stomach cramps.
  - Symptoms usually start 6 hours to 6 days after swallowing the bacteria.
  - Most people recover without treatment after 4 to 7 days.
- Some people—especially children younger than 5 years, adults 65 years and older, and people with weakened immune systems—may experience more severe illnesses that require medical treatment or hospitalization.
- For more information about *Salmonella*, see the *Salmonella* Questions and Answers page.

Investigation Details

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CDC and public health officials in several states are collecting different types of data to investigate multistate outbreaks of *Salmonella* infections with serotypes Braenderup, Enteritidis, Indiana, Infantis, Mbandaka, and Typhimurium.

Epidemiologic data show that contact with backyard poultry is making people sick.

Epidemiologic Data

Since the last update on June 15, 280 more illnesses have been reported. As of July 12, a total of 690 people infected with one of the outbreak strains have been reported from 47 states and Puerto Rico (see map). Illnesses started on dates ranging from January 1, 2023, to June 30, 2023 (see timeline). Of 459 people with information available, 141 (31%) have been hospitalized. No deaths have been reported.

The true number of sick people in an outbreak is likely much higher than the number reported, and the outbreak may not be limited to the states with known illnesses. This is because many people recover without medical care and are not tested for *Salmonella*. In addition, recent illnesses may not yet be reported as it usually takes 3 to 4 weeks to determine if a sick person is part of an outbreak.

Public health officials collect many different types of information from sick people, including their age, race, ethnicity, other demographics, and the animals they came into contact with during the week before they got sick. This information provides clues to help investigators identify the source of the outbreak.

The table below has information about sick people in this outbreak ("n" is the number of people with information available for each demographic).

Table of demographic information (n is the number of people with information available)

Demographics	Information
Age (n=672)	Range from 1 month to 92 years Median age of 31 23% under 5 years
Sex (n=674)	57% female 43% male
Race (n=455)	92% White 2% African American/Black 2% Native American or Alaska Native 1% Asian 1% Native Hawaiian or other Pacific Islander

Table of demographic information (n is the number of people with information available)

Demographics	Information
	3% reported more than one race
Ethnicity (n=438)	93% non-Hispanic 7% Hispanic

State and local public health officials are interviewing people about the animals they came into contact with in the week before they got sick. Of the 390 people with information about animal contact, 314 (81%) reported contact with backyard poultry before getting sick. Of 296 people who were asked about eggs from their backyard poultry, 78 (26%) reported eating eggs from their flock.

Laboratory and Traceback Data

Investigators in Michigan, Minnesota, Nevada, Utah, and Wisconsin collected samples from the areas where chicks are housed in stores or at sick people's homes. Whole genome sequencing (WGS) showed that *Salmonella* Braenderup, Enteritidis, Mbandaka, and Infantis found in the poultry's environments are closely related to bacteria from sick people. Poultry that lived in these environments were supplied to stores or poultry owners by at least four different poultry hatcheries.

Of 242 people with information on poultry purchases, 187 (77%) reported purchasing or obtaining poultry after January 1, 2023. Forty-four people reported purchasing poultry from multiple locations. People reported purchasing or obtaining poultry from at least 178 different locations, and 10 people reported purchasing poultry directly from hatcheries online. Investigators are continuing to work with stores and hatcheries that are identified during the investigation to find ways to reduce *Salmonella* in poultry.

WGS analysis was used to predict resistance to antibiotics for bacteria from 688 people's samples. Of these, 64 (9%) were predicted to be resistant to one or more of the following antibiotics: amoxicillin-clavulanic acid, ampicillin, cefoxitin, ceftiofur, ceftriaxone, ciprofloxacin, gentamicin, streptomycin, sulfamethoxazole, and tetracycline. Bacteria from the remaining 624 samples had no predicted resistance. Testing of bacteria from 8 sick people's samples using standard antibiotic susceptibility testing methods by CDC's National

Antimicrobial Resistance Monitoring System (NARMS) largely confirmed these results. Streptomycin and ceftiofur were not tested by this method, and one person's sample showed resistance to colistin. (NARMS added colistin to the list of drugs tested for *Salmonella in 2020*; resistance is defined as a minimum inhibitory concentration [MIC] of ≥4 µg/mL. Some *Salmonella* serotypes may have higher MICs naturally, even without acquired resistance identified.) Most people with *Salmonella* illness recover without antibiotics. However, if antibiotics are needed, this resistance is unlikely to affect the choice of antibiotic used to treat most people.

Public Health Actions

CDC advises everyone to take steps to stay healthy around backyard poultry. CDC and state partners are working with hatcheries and stores that sell poultry to educate new poultry owners and control the spread of *Salmonella* at hatcheries.