

Salmonella Typhimurium Illness Outbreak Associated with Chicken Salad, 2018

After-Action Review Report 2018-06

July 12, 2019

Overview

During February–April, 2018, public health officials in Iowa, the Centers for Disease Control and Prevention (CDC), and the Food Safety and Inspection Service (FSIS) investigated an outbreak of 265 *Salmonella enterica* serotype Typhimurium illnesses linked to chicken salad sold at multiple stores under the same corporation (Retailer A). In response to the illnesses, on February 9, 2018, Retailer A voluntarily removed chicken salad products from retail sale at all Retailer A locations. On February 13, 2018, the [Iowa Department of Inspections and Appeals](#) and [Iowa Department of Public Health](#) issued a joint consumer advisory and, on February 14, 2018, FSIS issued a [Public Health Alert](#). Iowa and FSIS officials conducted environmental assessments at Retailer A; no food safety concerns were noted. Chicken salad samples from two different Retailer A stores were positive for an outbreak strain of *Salmonella* Typhimurium. On February 21, 2018, FSIS Establishment B, manufacturer of the chicken salad sold by Retailer A, voluntarily [recalled](#) the chicken salad. Iowa and FSIS officials assessed Establishment B; contributing factors to the outbreak were not identified. Early identification of this outbreak allowed public health officials and industry stakeholders to act quickly to protect consumers. To promote collaborative outbreak response, FSIS developed a [recommended template](#) for public health partners to include FSIS in their foodborne illness outbreak response procedures and plans to update its [Policy on Use of Results from Non-FSIS Laboratories](#) outlined in FSIS Directive 10,000.1.

Epidemiology

- On February 9, 2018, the Iowa Department of Inspections and Appeals notified FSIS of an increase of *S. Typhimurium* illnesses in Iowa; molecular subtyping techniques were used to assess the relatedness of bacterial isolates and determine the outbreak strains (see Table 1 and Figure 1 for epidemiologic details).
- Among 222 case-patients with exposure information, 194 (87%) reported consuming chicken salad purchased at Retailer A; multiple Retailer A stores were reported.

Table. Case-patient characteristics—*S. Typhimurium* illness outbreak associated with chicken salad, 2018.

Total number of case-patients and states of residence	265 case-patients from 8 states (240 from Iowa; see CDC case count map)
Illness onset date range	January 8–March 20, 2018 (see Figure)
Age range (median) in years	<1–89 (57)
Percent female	67
Number of reported hospitalizations	94
Number of reported deaths	1 (Iowa resident)

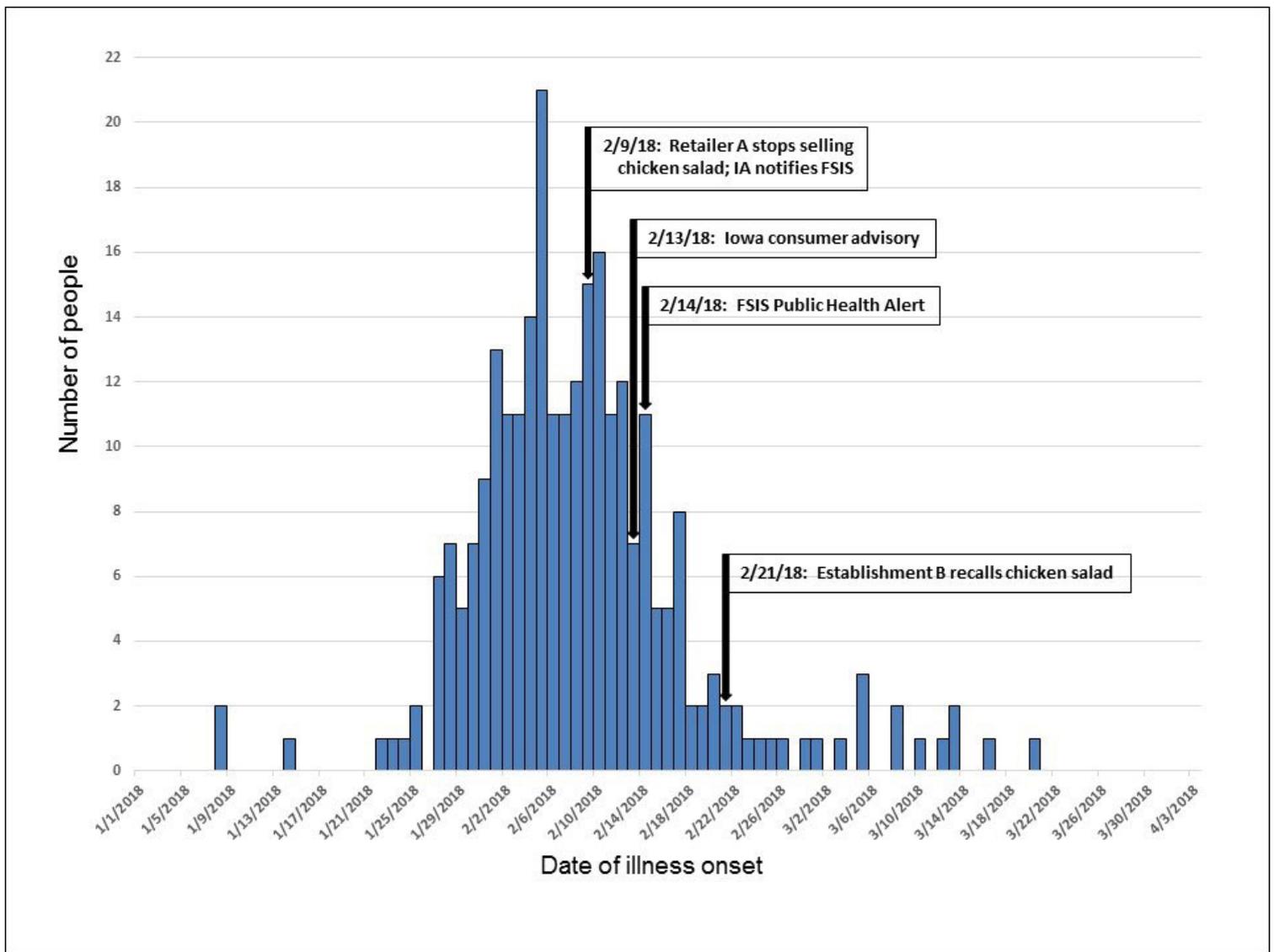


Figure. People infected with the outbreak strains of *S. Typhimurium*, by date of illness onset, with key outbreak response actions indicated.*
 *n=265 for whom information was reported as of April 4, 2018. Some illness onset dates have been estimated from other reported information. Adapted from [CDC epi curve](#)

Traceback

- The chicken salad was manufactured at Establishment B in Iowa and distributed regionally through a Retailer A distribution center to Retailer A stores.

Environmental Assessment

- Chicken was received raw and cooked at Establishment B prior to being mixed with celery and salad dressing to create the ready-to-eat chicken salad. The salad was sold to customers at Retailer A stores in bulk at the deli counter and in retail packages.
- Iowa public health officials and FSIS visited multiple Retailer A stores in Iowa in February 2018 to assess the retail sale of chicken salad. Assessment findings did not indicate cross-contamination or other food safety concerns.
- Iowa public health officials and FSIS visited Establishment B in February 2018 to assess the manufacture of the chicken salad. Contributing factors to the outbreak were not identified.

Product and Environmental Sampling

Retailer A

- Iowa public health officials collected and analyzed non-intact (opened packaging) chicken salad samples from seven Retailer A stores; two samples from two different stores were positive for the outbreak strains of *S. Typhimurium*.
 - Per its [Policy on Use of Results from Non-FSIS Laboratories](#), FSIS assessed and accepted these results.

- FSIS collected and analyzed three intact (unopened packaging) chicken salad samples from the Retailer A distribution center (one sample) and two Retailer A stores (two samples); all these samples were negative for *Salmonella*.

Establishment B

- Iowa public health officials collected and analyzed celery, salad dressing, and environmental swab samples from Establishment B; all these samples were negative for *Salmonella*.
- FSIS collected and analyzed 13 product and environmental swab samples; all these samples were negative for *Salmonella*.

Industry, Public Health, and Regulatory Actions (see Figure)

- Retailer A voluntarily removed chicken salad products from retail sale at all Retailer A locations on February 9, 2018.
- The [Iowa Department of Inspections and Appeals](#) and [Iowa Department of Public Health](#) issued joint consumer advisories on February 13, 2018.
- FSIS issued a [Public Health Alert](#) on February 14, 2018.
- Establishment B voluntarily [recalled](#) approximately 20,630 pounds of ready-to-eat chicken salad (produced during January 2–February 7, 2018) on February 21, 2018.
- CDC published a web posting about this outbreak investigation on February 22, 2018 (updated March 7, 2018; [final update April 6, 2018](#)).

Lessons Learned and Related Policy Actions

Communication between partners

- Early communication between public health partners during an outbreak investigation is necessary to clearly establish roles and responsibilities, coordinate activities, and discuss what is needed to identify root causes.
 - To provide recommendations for notifying FSIS of outbreaks, FSIS published a [Template for Including FSIS in Foodborne Illness Outbreak Response Procedures](#).
 - To clarify the information FSIS needs to take action in response to outbreaks, FSIS has published [Information Helpful to FSIS During Foodborne Illness Investigations](#).
 - To help expedite the process for assessing results from non-FSIS (e.g., state) laboratories to be used during outbreak response, FSIS plans to update its [Policy on Use of Results from Non-FSIS Laboratories](#).

Communication with industry

- A strong working relationship and effective communication between Iowa officials and Retailer A facilitated rapid removal of suspect product from retail sale.
- Agencies should communicate with involved firms during the early stages of, and throughout, an outbreak investigation to convey expectations and promote collaborative outbreak response.

Sampling

- Product samples should be collected in intact packaging, when possible.
- After removal of suspect product from retail sale, industry may consider holding (rather than discarding) product to enable subsequent sampling, if needed and appropriate.

Helpful Links

- Iowa joint consumer advisory:
 - [Iowa Department of Inspections and Appeals, February 13, 2018](#)
 - [Iowa Department of Public Health, February 13, 2018](#)
- [FSIS Public Health Alert, February 14, 2018](#)
- [Recall 013-2018, February 21, 2018](#)
- [CDC outbreak investigation web posting, April 6, 2018 \(final update\)](#)
- [Template for Including FSIS in Foodborne Illness Outbreak Response Procedures](#)
- [FSIS Directive 10,000.1, Policy on Use of Results from Non-FSIS Laboratories](#)
- [Information Helpful to FSIS During Foodborne Illness Investigations](#)
- [Resources for Public Health Partners: Foodborne Illness Investigation](#)

