

E. coli O26 Illness Outbreak Associated with Ground Beef, 2018

After-Action Review Report 2018-12

January 14, 2020

Overview

During July–October, 2018, public health officials in Florida, Massachusetts, Colorado, Tennessee, the Centers for Disease Control and Prevention (CDC), and the Food Safety and Inspection Service (FSIS) investigated an outbreak of 18 *E. coli* O26 illnesses linked to ground beef sold at multiple retailers and sourced from Establishment A. Two samples of ground beef collected during the investigation (one from Retailer B and one from the home of a case-patient) were positive for the outbreak strain of *E. coli* O26. On August 30, 2018, Retailer B voluntarily recalled affected ground beef. Later, on September 19, Establishment A also voluntarily recalled affected ground beef. During this outbreak investigation, two retailers used innovative mechanisms to obtain case-patient purchase histories, which helped identify the source of the implicated ground beef. Following the retail-level recall, many consumers returned product that was past the use-by date, indicating that investigators should consider action to protect the public from potentially contaminated food even if it is past its shelf life.

Epidemiology

- On August 16, 2018, CDC notified FSIS of a cluster of *E. coli* O26 illnesses; molecular subtyping techniques were used to assess the relatedness of bacterial isolates and determine the outbreak strain (see Table 1 for epidemiologic details).
- Among 14 case-patients with available exposure information, 14 (100%) reported consuming ground beef in the week before they became ill; 13 case-patients shopped at multiple locations of the same retail corporation (Retailer B).

Table. Case-patient characteristics—*E. coli* illness outbreak associated with ground beef, 2018.

Total number of case-patients and states of residence	18 case-patients from 4 states (15 from Florida; see CDC map of reported cases)
Illness onset date range	July 5-25, 2018 (see CDC timeline of reported cases)
Age range (median) in years	1–75 years (median 16)
Percent female	33
Number of reported hospitalizations	6 (including 1 case-patient with hemolytic-uremic syndrome)
Number of reported deaths	1 (Florida resident)

Traceback Investigation

- Utilizing records from case-patients and multiple retailers, FSIS conducted a traceback investigation and determined that the suspect ground beef was manufactured at Establishment A in Colorado and shipped to retailers nationwide.

Retailer B

- Retailer B established a phone hotline for case-patient customers to call to obtain their purchase histories using a partial credit card number; in collaboration with Florida officials, purchase information for five case-patients was obtained in this manner.
- Ground beef purchased from Retailer B and traced using case-patient purchase information was sourced from Establishment A.

Retailer C

- A Massachusetts case-patient was exposed to ground beef that was purchased by check from Retailer C, which utilizes check-cashing cards for purchases made by check.
- Using the numbers of the check-cashing card and check used to make the purchase, Retailer C was able to identify the purchased ground beef, which was sourced from multiple establishments, including Establishment A.

Retailer D

- A Colorado case-patient provided a receipt for a purchase from Retailer D of ground beef sourced from Establishment A.

Product Sampling

- FSIS collected and analyzed intact (unopened packaging) ground beef from Retailer B; this sample was positive for the outbreak strain of *E. coli* O26.
- Florida officials collected and analyzed non-intact (opened packaging) leftover ground beef from the home of a case-patient; this sample was positive for the outbreak strain of *E. coli* O26.

Industry, Public Health, and Regulatory Actions

- Retailer B voluntarily recalled affected ground beef on August 30, 2018.
- Establishment A voluntarily recalled approximately 132,606 pounds of ground beef on September 19, 2018.
- CDC published a Food Safety Alert about this outbreak on September 20, 2018.

Lessons Learned and Related Policy

Traceback

- During this outbreak investigation, two retailers without shopper/loyalty card programs used innovative mechanisms to obtain case-patient purchase histories while maintaining consumer confidentiality. They shared these purchase histories with government public health partners, which helped identify the source of the implicated ground beef. Hence, even in the absence of membership or shopper/loyalty card programs, retailers can assist with traceback investigations by obtaining and sharing purchase information with government investigators.

Recall

- Investigators pursued a single, comprehensive manufacturing-level recall of implicated ground beef. However, when investigators were unable to determine its source initially, a retail-level recall occurred. Later, when investigators eventually identified the source of the ground beef, the manufacturer recalled it. Outbreak investigators should continue to take effective action as early as possible to protect the public when they establish a credible link between illness and a food product. Appropriate outbreak response may involve retail- or manufacturer-level recalls, or both. However, multiple actions at different times may lead to consumers not paying as much attention to subsequent actions (i.e. recall fatigue).
- In addition to notifying its customers of the retail-level recall, Retailer B contacted food banks which might have received the recalled products. Food recovery programs should be considered in retailers' recall programs.
- Following the retail-level recall, >100 consumers returned product that was past the use-by date to the retailer (e.g. after being stored in consumer freezers). It is evident from this that considering action to protect the public from potentially contaminated food past its shelf life may be worthwhile.

Communication with industry

- In this investigation, government and industry partners collaborated toward a common goal to protect consumers from foodborne illness. During an outbreak investigation, establishing a regular rhythm of communication between government and industry can help clarify roles and facilitate timely sharing of investigative information.

Helpful Links

- [Recall 072-2018, August 30, 2019 \(Retailer B\)](#)
- [Recall 081-2018, September 19, 2019 \(Establishment A\)](#)
- [CDC Food Safety Alert, September 20, 2018](#)