

Timeline of Events: Multistate Outbreak of *Salmonella* Heidelberg Infections Associated with Ground Turkey — United States, 2011

Outbreak Identification, Source Implication and Results of Product Testing

May 23
CDC PulseNet¹ identified multistate cluster of *Salmonella* Heidelberg infections (30 ill persons, 17 states) and began monitoring for additional illnesses. Investigators noted two ground turkey isolates matching the outbreak strain that were uploaded to PulseNet by MN on 4/11/2011 (Retail Sample 1) and NM on 5/11/2011 (Retail Sample 2) as part of NARMS² surveillance.

May 26
CDC began coordinating a multistate investigation. MN reported Retail Sample 1 was Brand A produced at establishment P-963.

June 16 – June 21
Exposure information from 19 ill persons revealed no single food that stood out as a likely source; 32% reported eating multiple brands and types of ground turkey.

June 21
CDC asked states to use a turkey-specific questionnaire to further characterize turkey exposures. NM reported Retail Sample 2 was Brand A produced at establishment P-963; another NARMS retail sample (Sample 3 uploaded to PulseNet by NM 6/8/2011) matching the outbreak strain was Brand B.

June 21 – July 7
Exposure information from turkey-specific questionnaires collected for 16 ill persons in 6 states; 33% reported consumption of multiple brands and types of ground turkey.

July 7
CDC asked states to use an expanded questionnaire to further examine other possible sources in addition to ground turkey.

July 8–August 2
23 ill persons interviewed with expanded questionnaire; 54% reported consumption of ground turkey.

July 15
OR reported first results from clinical laboratory indicating the outbreak strain was multidrug resistant.

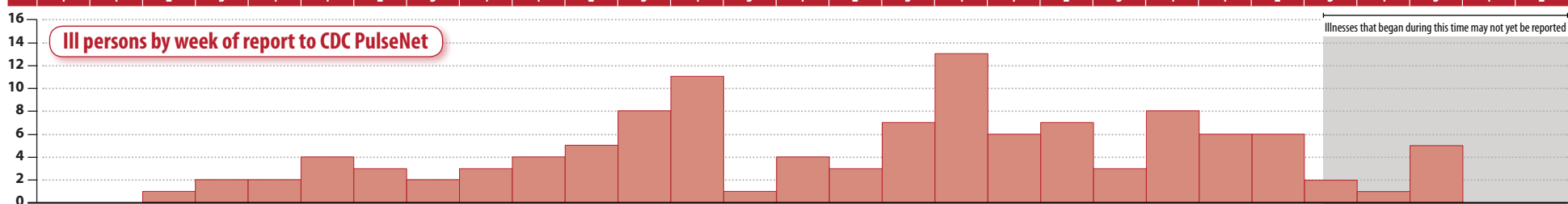
July 29
Tests of leftover ground turkey from the home of an ill person in Ohio yielded *Salmonella* Heidelberg. Laboratory analysis identified two closely related DNA “fingerprint” patterns; one an exact match to the outbreak strain.

August 1
CDC posted initial web announcement about the investigation.

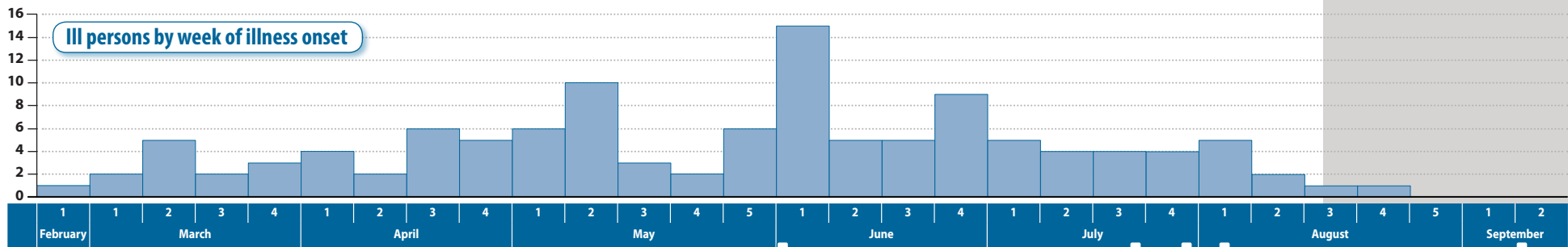
August 11
23 additional ill persons with *Salmonella* Heidelberg with a closely related DNA “fingerprint” pattern with illness since March included in total number of ill persons.



Ill persons by week of report to CDC PulseNet



Ill persons by week of illness onset



Traceback, Regulatory Actions and Recalls

June 1
CDC notified USDA-FSIS. Frequent discussions between both agencies continue throughout the investigation.

July 19
FSIS began first traceback investigation. Product was left over ground turkey from ill person's household; original packaging not available.

July 19–August 2
FSIS continued traceback of ground turkey as shopper card details received; purchased from three ill persons linked to P963.

July 29
FSIS released a public health alert for frozen and fresh ground turkey products.

July 29
FSIS informed Cargill Meat Solutions Corporation about epidemiologic data, information from traceback of ground turkey products, and analysis of distribution records indicating establishment P-963 is a likely, but not definitive, source of this outbreak.

August 3
FSIS reported that the source of ground turkey for Brand B Retail Sample 3 was establishment P-963. 30 (54%) of 56 interviewed ill persons reported eating any ground turkey prepared at home in the week before illness.

August 3
Cargill Meat Solutions Corporation recalled approximately 36 million pounds of ground turkey products that may be contaminated with a multi-drug resistant strain of *Salmonella* Heidelberg.

September 11
Cargill Meat Solutions Corporation recalled approximately 185,000 pounds of ground turkey that may be contaminated with *Salmonella* Heidelberg based on sample results from an intensive in-plant investigation.

¹ PulseNet
² National Antimicrobial Resistance Monitoring System