

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

## Outbreak Identification and Source Implication

**May 23**  
CDC PulseNet<sup>1</sup> 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 NARMS<sup>2</sup> surveillance.

**May 26**  
CDC began coordinating a multistate investigation.

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

**June 2**  
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.

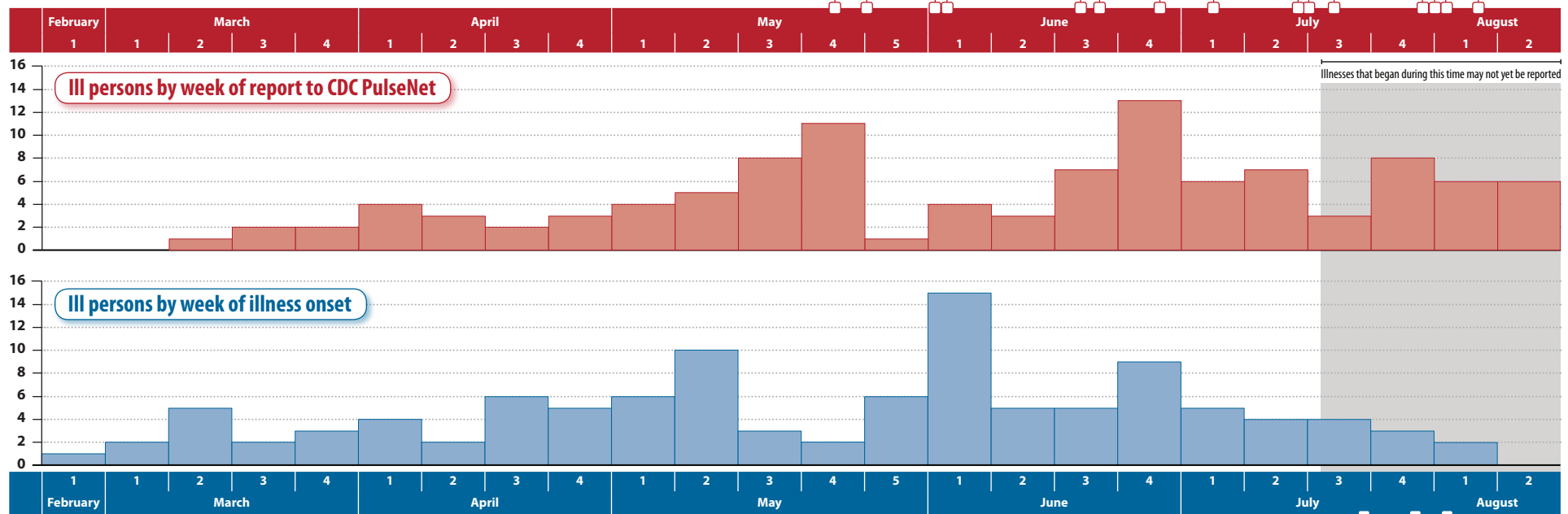
**July 19**  
FSIS began first traceback investigation. Product was left over ground turkey from ill person's household; original packaging not available.

**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 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 11**  
23 additional ill persons infected with *Salmonella* Heidelberg with a closely related DNA "fingerprint" pattern included in total number of ill persons.



## Regulatory Actions, Recalls and Results of Product Testing

**July 19 – August 2**  
FSIS traceback of ground turkey products identified from shopper cards from three ill persons linked their purchases to Brand A produced at P963.

**July 29**  
FSIS released a public health alert for frozen or 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**  
Cargill Meat Solutions Corporation recalled approximately 36 million pounds of ground turkey products that may be contaminated with a multidrug resistant strain of *Salmonella* Heidelberg.

<sup>1</sup> PulseNet  
<sup>2</sup> National Antimicrobial Resistance Monitoring System