A Rapid One Week Response

Salmonella Braenderup in Potato Salad

Melanie Harris, MPA
IA RRT Coordinator
Iowa Department of Inspections and Appeals
Iowa Food Protection Rapid Response Team (RRT)

• FDA-funded initiative
  • Began in Iowa in late 2012

• Iowa RRT Goals:
  • Improve the proficiency of food and feed emergency response
  • Increase communication and collaboration between federal, state and local response partners

• Made up of:
  • Core RRT
    • Iowa Department of Inspections and Appeals (DIA)
    • Iowa Department of Public Health (IDPH)
    • Iowa Department of Agriculture and Land Stewardship (IDALS)
  • Coordinating Council (existing key senior staff)
Potato Salad Outbreak
the story begins...
July 18, 2016

- Health departments identified increase in the number of *Salmonella* cases in Iowa County via routine surveillance.
- Investigation started.
Health departments identified increase in the number of Salmonella cases in Iowa County via routine surveillance.

Investigation started.

County alerted area healthcare providers of the increase in cases of Salmonella.
July 18, 2016
- Health departments identified increase in the number of Salmonella cases in Iowa County via routine surveillance.
- Investigation started.

July 19, 2016
- County Public Health Nurse alerted area healthcare providers of the increase in cases of Salmonella.

July 22, 2016
- State re-interviewed cases using Iowa’s hypothesis generating questionnaire.
- A common exposure association was identified as the consumption of Big G Food Store Traditional or Zesty Potato Salad.
**July 18, 2016**
- Health departments identified increase in the number of Salmonella cases in Iowa County via routine surveillance.
- Investigation started.

**July 22, 2016**
- IDPH started to re-interview cases using Iowa’s hypothesis generating questionnaire.
- A common exposure association was identified as the consumption of Big G Food Store Traditional or Zesty Potato Salad.

**July 22, 2016**
- IDPH notified DIA Rapid Response Team (IA RRT) of the findings.
- IA RRT contacted Big G Food Store and requested Traditional and Zesty potato salad from the deli counter and cooler display be removed and held for product testing.
Food sampling considerations

• Epi investigation leads to suspect food(s)
  • Incubation period
  • Duration of illness, if known
  • Suspect causative agent

• Availability of suspected food

• Consultation with lab
  • Availability of lab testing for the suspect causative agent
  • Appropriate collection and storage procedure
  • Transport and receipt
  • Chain of custody and lab forms
July 18, 2016
- IDPH in collaboration with a LPHA identified an increase in the number of Salmonella cases in Iowa County via routine surveillance.
- Investigation started.

July 19, 2016
- County Public Health Nurse alerted area healthcare providers of the increase in cases of Salmonella.

July 22, 2016
- IDPH started to re-interview cases using Iowa’s hypothesis generating questionnaire.
- A common exposure association was identified as the consumption of Big G Food Store Traditional or Zesty Potato Salad.

July 22, 2016
- IDPH notified DIA Rapid Response Team (IA RRT) of the findings.
- IA RRT contacted Big G Food Store and requested that all Traditional and Zesty potato salad from the deli counter and cooler display be removed and held for product testing.

July 23, 2016
- IA RRT inspectors traveled to Big G Food Store to collect potato salad samples and delivered them to the State Hygienic Laboratory (SHL) for testing.
- IDPH continued with interviews.
July 18, 2016
• IDPH in collaboration with a LPHA identified increase in the number of Salmonella cases in Iowa County via routine surveillance.
• Investigation started.

July 19, 2016
• County Public Health Nurse alerted area healthcare providers of the increase in cases of Salmonella.

July 20, 2016
• IDPH notified DIA Rapid Response Team (IA RRT) of the findings.
• IA RRT contacted Big G Food Store and requested that all Traditional and Zesty potato salad from the deli counter and cooler display be removed and held for product testing.

July 22, 2016
• IDPH started to re-interview cases using Iowa’s hypothesis generating questionnaire.
• A common exposure association was identified as the consumption of Big G Food Store Traditional or Zesty Potato Salad.

July 23, 2016
• IA RRT inspectors traveled to Big G Food Store to collect potato salad samples and delivered them to the State Hygienic Laboratory (SHL) for testing.
• IDPH continued with interviews.

July 25, 2016
• State was notified of illness from a private BBQ and a funeral luncheon with store’s potato salad served
• There were approximately 100 people who attended the funeral. Thirty-four interviewees were ill.
July 18, 2016
• IDPH in collaboration with a LPHA identified an increase in the number of Salmonella cases in Iowa County via routine surveillance.
• Investigation started.

July 22, 2016
• IDPH started to re-interview cases using Iowa’s hypothesis generating questionnaire.
• A common exposure association was identified as the consumption of Big G Food Store Traditional or Zesty Potato Salad.

July 25, 2016
• IDPH was notified of illness from two different events where the Big G Food Store potato salad was served; a private BBQ and a funeral luncheon.
• There were approximately 100 people who attended the funeral. Thirty-four interviewees were ill.

July 19, 2016
• County Public Health Nurse alerted area healthcare providers of the increase in cases of Salmonella.

July 22, 2016
• IDPH notified DIA Rapid Response Team (IA RRT) of the findings.
• IA RRT contacted Big G Food Store and requested that all Traditional and Zesty potato salad from the deli counter and cooler display be removed and held for product testing.

July 23, 2016
• IA RRT inspectors traveled to Big G Food Store to collect potato salad samples and delivered them to the State Hygienic Laboratory (SHL) for testing.
• IDPH continued with interviews.

July 25, 2016
• IDPH and DIA in collaboration with Big G Food Store issued a consumer advisory.

• Big G Food Store deli and kitchen production was ceased and environmental samples were collected.
Environmental sampling considerations

- Suspected causative agent is conducive to sampling
- Food samples are unavailable
- Method of contamination is unclear
- Trained sampling personnel
  - Environmental sampling
  - Pathogen specific locations
- Availability of sampling materials (sponges, broth, gloves)
- Lab testing capability
- Verification of cleaning of the implicated facility
Environmental Sampling

- Potato salad in walk-in cooler
- Sample of potato salad
- Sprayer at compartment sink
- Stacked buckets in walk-in
**July 18, 2016**
- IDPH in collaboration with a LPHA identified increase in the number of Salmonella cases in Iowa County via routine surveillance.
- Investigation started.

**July 22, 2016**
- IDPH started to re-interview cases using Iowa’s hypothesis generating questionnaire.
- A common exposure association was identified as the consumption of Big G Food Store Traditional or Zesty Potato Salad.

**July 23, 2016**
- IA RRT inspectors traveled to Big G Food Store to collect potato salad samples and delivered them to the State Hygienic Laboratory (SHL) for testing.
- IDPH continued with interviews.

**July 25, 2016**
- IDPH was notified of illness from two different events where the Big G Food Store potato salad was served; a private BBQ and a funeral luncheon.
- There were approximately 100 people who attended the funeral. Thirty-four interviewees were ill.

**July 26, 2016**
- Laboratory testing at SHL found the same *Salmonella* bacteria in the potato salad as the clinical samples.
- Twenty-three clinical specimens and seven potato salad samples tested positive with *Salmonella* Braenderup (PFGE pattern JBPX01.0039).

**July 27, 2016**
- County Public Health Nurse alerted area healthcare providers of the increase in cases of Salmonella.
- IDPH notified DIA Rapid Response Team (IA RRT) of the findings.
- IA RRT contacted Big G Food Store and requested that all Traditional and Zesty potato salad from the deli counter and cooler display be removed and held for product testing.
- IDPH continued with interviews.
- Based on epidemiological data and presumptive positive results of the potato salad, IDPH and DIA in collaboration with Big G Food Store issued a consumer advisory.
- All Big G Food Store deli and kitchen production was ceased and environmental samples were collected.
Laboratory Testing

• Salmonella Braenderup Pulsed Filled Gel Electrophoresis (PFGE)
  • Patient and potato salad samples
  • All isolates indistinguishable by PFGE
July 18, 2016
• IDPH in collaboration with a LPHA identified increase in the number of Salmonella cases in Iowa County via routine surveillance.
• Investigation started.

July 22, 2016
• IDPH started to re-interview cases using Iowa’s hypothesis generating questionnaire.
• A common exposure association was identified as the consumption of Big G Food Store Traditional or Zesty Potato Salad.

July 23, 2016
• IA RRT inspectors traveled to Big G Food Store to collect potato salad samples and delivered them to the State Hygienic Laboratory (SHL) for testing.
• IDPH continued with interviews.

July 25, 2016
• IDPH was notified of illness from two different events where the Big G Food Store potato salad was served; a private BBQ and a funeral luncheon.
• There were approximately 100 people who attended the funeral. Thirty-four interviewees were ill.

July 27, 2016
• Laboratory testing at SHL found the same Salmonella bacteria in the potato salad as the clinical samples.
• Twenty-three clinical specimens and seven potato salad samples tested positive with Salmonella Braenderup (PFGE pattern JBPX01.0039).

July 28, 2016
• Two of the environmental samples tested presumptive positive for Salmonella by PCR:
  • the stacked buckets in the walk-in cooler and
  • the handle of the sprayer at the three compartment sink.
• The stacked buckets were used to hold raw chicken.
• The buckets were also used to hold the prepared potato salad.
Environmental Sampling

Potato salad in walk-in cooler

Sample of potato salad

Sprayer at compartment sink

Stacked buckets in walk-in
July 18, 2016
• IDPH in collaboration with a LPHA identified an increase in the number of Salmonella cases in Iowa County via routine surveillance.
• Investigation started.

July 19, 2016
• County Public Health Nurse alerted area healthcare providers of the increase in cases of Salmonella.

July 22, 2016
• IDPH notified DIA Rapid Response Team (IA RRT) of the findings.
• IA RRT contacted Big G Food Store and requested that all Traditional and Zesty potato salad from the deli counter and cooler display be removed and held for product testing.

July 23, 2016
• IA RRT inspectors traveled to Big G Food Store to collect potato salad samples and delivered them to the State Hygienic Laboratory (SHL) for testing.
• IDPH continued with interviews.

July 25, 2016
• IDPH was notified of illness from two different events where the Big G Food Store potato salad was served; a private BBQ and a funeral luncheon.
• There were approximately 100 people who attended the funeral. Thirty-four interviewees were ill.

August 2, 2016
• Second round of environmental sampling conducted after professional cleaning.

July 22, 2016
• IDPH started to re-interview cases using Iowa’s hypothesis generating questionnaire.
• A common exposure association was identified as the consumption of Big G Food Store Traditional or Zesty Potato Salad.

July 25, 2016
• IDPH was notified of illness from two different events where the Big G Food Store potato salad was served; a private BBQ and a funeral luncheon.
• Laboratory testing at SHL found the same Salmonella bacteria in the potato salad as the clinical samples.
• Twenty-three clinical specimens and seven potato salad samples tested positive with Salmonella Braenderup (PFGE pattern JBPX01.0039).

July 28, 2016
• Two of the environmental samples tested presumptive positive for Salmonella by PCR.
• The stacked buckets in the walk-in cooler and the handle of the sprayer at the three compartment sink.
• The stacked buckets were used to hold raw chicken.
• The buckets were also used to hold the prepared potato salad.
July 18, 2016
• IDPH in collaboration with a LPHA identified increase in the number of Salmonella cases in Iowa County via routine surveillance.
• Investigation started.

July 19, 2016
• County Public Health Nurse alerted area healthcare providers of the increase in cases of Salmonella.

July 22, 2016
• IDPH started to re-interview cases using Iowa’s hypothesis generating questionnaire.
• A common exposure association was identified as the consumption of Big G Food Store Traditional or Zesty Potato Salad.

July 23, 2016
• IA RRT inspectors traveled to Big G Food Store to collect potato salad samples and delivered them to the State Hygienic Laboratory (SHL) for testing.
• IDPH continued with interviews.

July 25, 2016
• IDPH was notified of illness from two different events where the Big G Food Store potato salad was served; a private BBQ and a funeral luncheon.
• There were approximately 100 people who attended the funeral. Thirty-four interviewees were ill.

July 27, 2016
• Laboratory testing at SHL found the same Salmonella bacteria in the potato salad as the clinical samples.
• Twenty-three clinical specimens and seven potato salad samples tested positive with Salmonella Braenderup (PFGE pattern JBPX01.0039).

July 28, 2016
• Two of the environmental samples tested presumptive positive for Salmonella by PCR.
• The stacked buckets in the walk-in cooler and the handle of the sprayer at the three compartment sink.
• The stacked buckets were used to hold raw chicken.
• The buckets were also used to hold the prepared potato salad.

August 2, 2016
• Second round of environmental sampling was conducted after completion of professional cleaning.

August 4, 2016
• Whole Genome Sequencing (WGS) showed that isolates from five clinical specimens and the potato salad were highly related with 0-5 SNPs difference.
Salmonella ser. Braenderup 1605MLJBP-1 (JBPX01.0039)
July 18, 2016
- IDPH in collaboration with a LPHA identified increase in the number of Salmonella cases in Iowa County via routine surveillance.
- Investigation started.

July 19, 2016
- County Public Health Nurse alerted area healthcare providers of the increase in cases of Salmonella.

July 20, 2016
- IDPH notified DIA Rapid Response Team (IA RRT) of the findings.
- IA RRT contacted Big G Food Store and requested that all Traditional and Zesty potato salad from the deli counter and cooler display be removed and held for product testing.

July 21, 2016
- IA RRT inspectors traveled to Big G Food Store to collect potato salad samples and delivered them to the State Hygienic Laboratory (SHL) for testing.
- IDPH continued with interviews.

July 22, 2016
- IDPH started to re-interview cases using Iowa's hypothesis generating questionnaire.
- A common exposure association was identified as the consumption of Big G Food Store Traditional or Zesty Potato Salad.

July 23, 2016
- Based on epidemiological data and presumptive positive results of the potato salad, IDPH and DIA in collaboration with Big G Food Store issued a consumer advisory.
- All Big G Food Store deli and kitchen production was ceased and environmental samples were collected.

July 24, 2016

July 25, 2016
- IDPH was notified of illness from two different events where the Big G Food Store potato salad was served; a private BBQ and a funeral luncheon.
- There were approximately 100 people who attended the funeral. Thirty-four interviewees were ill.

July 26, 2016
- Laboratory testing at SHL found the same Salmonella bacteria in the potato salad as the clinical samples.
- Twenty-three clinical specimens and seven potato salad samples tested positive with Salmonella Braenderup (PFGE pattern JBPX01.0039).

July 27, 2016
- Laboratory testing at SHL found the same Salmonella bacteria in the potato salad as the clinical samples.
- Two of the environmental samples tested presumptive positive for Salmonella by PCR.
  - the stacked buckets in the walk-in cooler and
  - the handle of the sprayer at the three compartment sink.
  - The stacked buckets were used to hold raw chicken.
  - The buckets were also used to hold the prepared potato salad.

July 28, 2016
- IDPH notified DIA Rapid Response Team (IA RRT) of the findings.
- IA RRT contacted Big G Food Store to collect potato salad samples and delivered them to the State Hygienic Laboratory (SHL) for testing.
- IDPH continued with interviews.

August 2, 2016
- Second round of environmental sampling was conducted after completion of professional cleaning.
- Results from Whole Genome Sequencing (WGS) showed that isolates from five clinical specimens and the potato salad were highly related with 0-5 SNPs difference.

August 4, 2016
- Big G Food Store deli and kitchen reopened after 2nd round of environmental sampling showed all negatives.
In summary...

• In total 55 cases (32 related to funeral) were part of this investigation
• All ill persons recovered from their symptoms
• SHL identified *Salmonella* Braenderup with PFGE pattern JBPX01.0039 in 23 clinical isolates and seven food samples
• Whole genome sequencing performed on five clinical isolates and potato salad sample were highly related with 0-5SNPs difference