Salmonella Typhimurium Restaurant Cluster Associated with Raw Beef Kibbeh - Michigan, 2012

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Salmonellosis

- Highest incidence enteric bacterial infection
  - Approximately 1,000 cases/yr in Michigan
- Symptoms: diarrhea, fever, abdominal cramps; sepsis is a possible complication

- *S. Typhimurium J PXX01.3247*
  - Rare (new in 2012)
  - Antimicrobial resistance: pansusceptible

Source: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6315a3.htm
Detection of the Outbreak

• Laboratory subtyping (PFGE) on 12/21
  – 3 MI cases with JPXX01.3247
    • 2 different jurisdictions
    – USDA isolate from boneless beef, isolated 11/19 in MN

• Restaurant complaint on 12/20
  – 12/7 meal, shared item: raw kibbeh
  – 6/10 ill (not tested)
Exposure Summary

- On routine interview, cases report meals at a local Lebanese restaurant
  - One initial report of raw *lamb* kibbeh
  - One initial report of raw beef *kidney*
  - Ultimately, all cases report beef kibbeh
    - 5 unrelated households
    - Meal dates: 12/7 and 12/8
      - One case ate leftovers on 12/9

Source: www.maureenabood.com
Descriptive Epidemiology

- 7 confirmed cases from AZ (1), MI (6)
  - 5 probable cases (epi-linked)
- Onset range: 12/9 – 12/13
- Known ages: 17-87 years (median 55)
- Sex: 50% male
- Hospitalized: 4/12 (33%)
- Arab ethnicity: 3 cases
Environmental Investigation

- Restaurant purchased ground beef from small local halal grocers
- Retail store recalls of ground beef
  - Jouni Meats, Inc (500 lbs) on 1/24/2013
  - Gab Halal Foods (550 lbs) on 1/25/2013
- Findings suggest upstream contamination
  - Further traceback performed
Multistate Outbreak

Persons infected with the outbreak strain of *Salmonella* Typhimurium, by date of illness onset*

Number of persons

![Bar chart showing number of cases by date of illness onset, with a peak in 2012 and lesser cases in 2013.]

Current Case Count Map

Persons infected with the outbreak strain of *Salmonella* Typhimurium, by State*

- AZ 1
- IL 2
- IA 1
- WI 8
- PA 1

*n=22 for whom information was reported as of March 13, 2013.*

FOR IMMEDIATE RELEASE
January 25, 2013

Salmonella Outbreak in Southeast Michigan Linked to Consumption of Raw Ground Beef

LANSING - The Michigan departments of Community Health (MDCH) and Agriculture and Rural Development (MDARD) are investigating a cluster of nine cases of laboratory-confirmed Salmonella Typhimurium infection. Six of the nine people have reported eating raw kibbeh on

Recommendations for the Public to Prevent Salmonella Infection:
- Cook ground beef, poultry, and eggs thoroughly to recommended internal temperatures using a food thermometer.

Source: http://www.michigan.gov/mdhhs/0,5885,7-339-73970_71692_8347-293682--,00.html
Routine Communication

• Consumer advisory
  – Menu labeling as required by Michigan Food Code

Kibbeh Nayeh* (Raw) $13.99
The very Lebanese specialty! Lean and tender, freshly made to your taste

*Cook to order. Consuming raw or under-cooked meats, poultry, seafood, shellfish, or eggs may increase your risk of food-borne illness

**E. coli O157:H7 Outbreak - 2014**

- 11/12 (92%) reported eating ground beef prepared as a hamburger at a restaurant
  - 8/11 (73%) may have eaten the hamburger prepared rare, medium rare, or “undercooked”
- Wolverine Packing Company recalled 1.8 million pounds of ground beef

Questions?