

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

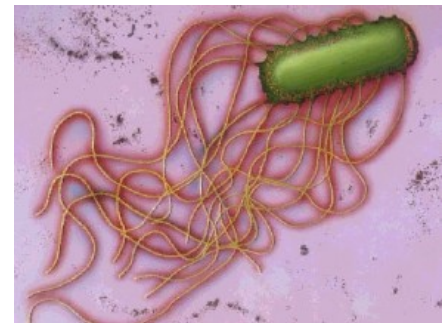


**Katie Arends, MPH**

**Michigan Department of Health and Human Services**

# 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* JPXX01.3247**
  - Rare (new in 2012)
  - Antimicrobial resistance: **pansusceptible**



Source: nasa.gov



# 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](http://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

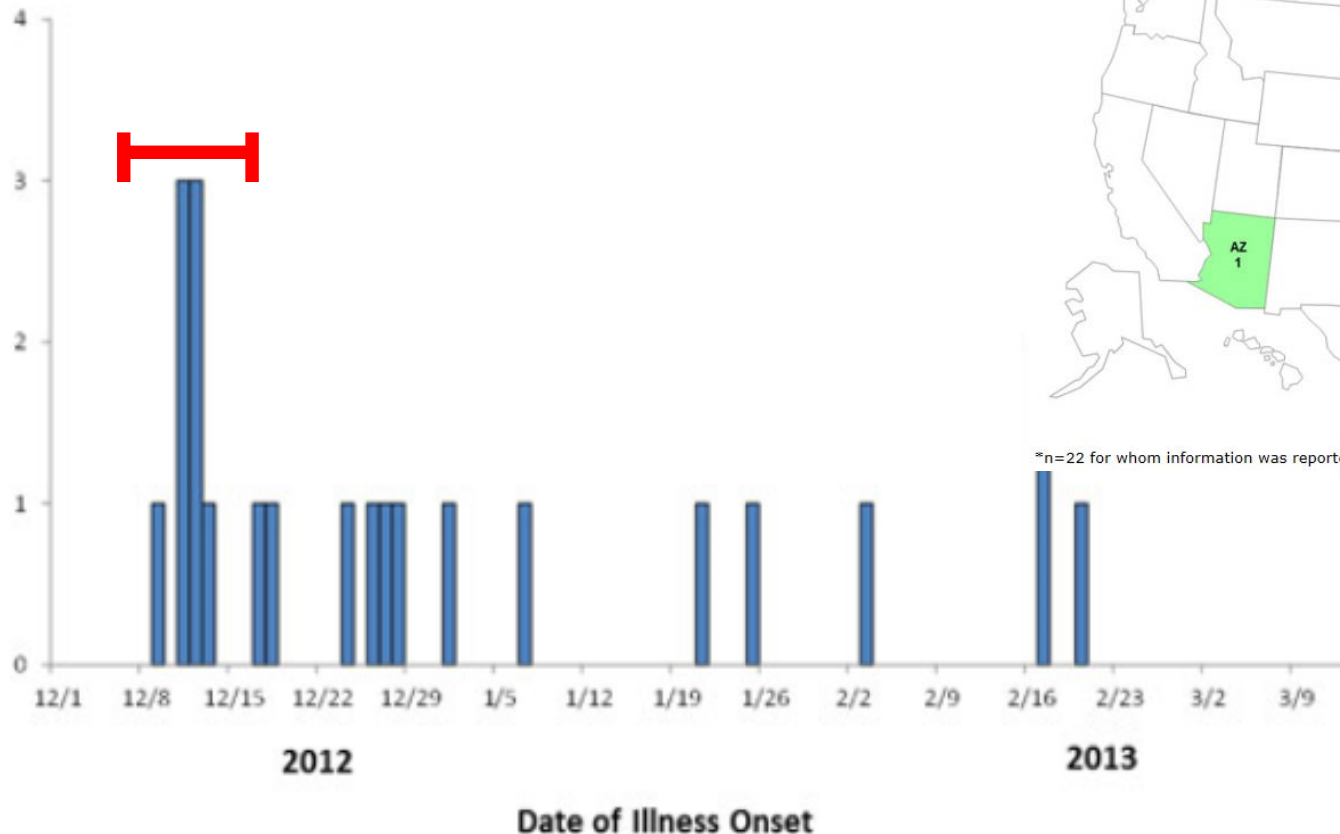
- **Restaurant purchased ground beef from small local halal grocers**
- **Retail store recalls of ground beef**
  - **Jouni Meats, Inc (500 lbs) on 1/24/2013**
  - **Gab Halal Foods (550 lbs) on 1/25/2013**
- **Findings suggest upstream contamination**
  - **Further traceback performed**



# Multistate Outbreak

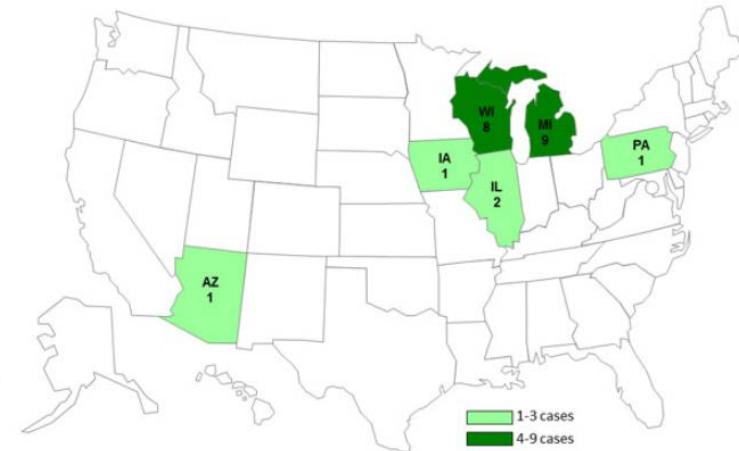
Persons infected with the outbreak strain of *Salmonella* Typhimurium, by date of illness onset\*

Number of persons



Current Case Count Map

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



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

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Source: <http://www.cdc.gov/salmonella/typhimurium-01-13/index.html>



# Outbreak Communication



STATE OF MICHIGAN  
DEPARTMENT OF COMMUNITY HEALTH  
LANSING

RICK SNYDER  
GOVERNOR

JAMES K. HAVEMAN  
DIRECTOR

FOR IMMEDIATE RELEASE  
January 25, 2013

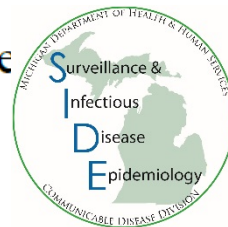
MDCH CONTACT: Angela Minicuci  
(517) 241-2112  
MDARD CONTACT: Jennifer Holton  
(517) 241-2485

## ***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 temperature using a food thermometer.





# 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?

