Jackson County Food Borne Outbreak

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Background:

- Jackson County Spanish Club
- Catered Awards Dinner
- Approximately 60 people in attendance
- Buffet style Mexican theme
- Dinner began 6:00pm March 6\textsuperscript{th} 2012
- Onset symptoms began between 9:00pm 03/06/2012 and 9:00am 03/07/2012
Symptoms:

- Fever
- Nausea
- Vomiting
- Diarrhea
- Abdominal Cramps
Case Definition:

Any individual attending Spanish Awards Dinner @ Jackson County High School on March 6\textsuperscript{th} 2012 with any symptoms of:

Fever, Nausea, Vomiting, Diarrhea, Abdominal cramps with onset between hours of 9:00 pm March 6\textsuperscript{th} 2012 and 9:00 am March 7\textsuperscript{th} 2012.
What Happened Next?

- Regional Epidemiologist notified 03/07/2012
- Frankfort Notified – Doug Thoroughman
- His suggestion “do case control study along with other individuals showing symptoms”
- KDPH Enteric Disease Investigation Form used
- Interviewed all individuals attended dinner
- Collection of food samples from dinner
Menu:

- Catered dinner with:
  - Beef enchiladas
  - Spanish rice
  - Chicken fajitas
  - Black bean soup
  - Fried plantain
  - Pineapple cake
  - Brownies
Next Step:

- Shawn Reynolds – Jackson Co. HD Environmentalist collected food samples left over from dinner
- Submitted to DLS for analysis
- Food samples tested for *Staphylococcus aureus*, *B. cereus* & *C. perfringens*
- Stool samples requested from individuals showing symptoms
Results:

• Some individuals began showing symptoms early as 11:00 pm on March 6\textsuperscript{th}, 2012
• Majority individuals showed symptoms between 12:00 pm March 6\textsuperscript{th} 2012 & 6:00 am March 7\textsuperscript{th} 2012.
• Beef enchiladas was food item most individuals consumed
• Primary complaint: beef was not even warm when served.
Epidemic Curve
Jackson County Foodborne Illness Outbreak

Number of Cases

Symptom Onset

3-Mar-12
5-Mar-12 03:00
6-Mar-12 21:00
7-Mar-12 03:00
7-Mar-12 09:00
7-Mar-12 15:00
Results Cont:

• Usual enteric bacteria tested for:
  • Salmonella
  • Shigella
  • E- coli
• *C. perfringens* - all negative from private lab specific test was not requested
• DLS – *C. perfringens* positive. Isolate sent to DLS PFGE lab for analysis
Lab and Clinical Results:

- DLS – examined & found isolates from enchilada food sample contained 2,000,000 \textit{C. perfringens} per gram.

- \textit{S. aureus} – tested 14,000 per gram but enterotoxin test negative

- \textit{B. Cereus} – toxin found after enrichment not considered confirmatory test

- None of three requested pathogens/enterotoxins found in other food
Road Blocks:

- March 2\textsuperscript{nd} tornado – man power spread thin both locally & KDPH
- Food borne outbreak followed recent Norovirus outbreak KBA – JCHD still thinking “virus” (Norovirus) instead of bacterial pathogens –
- Individuals reluctant to collect & submit stool samples for testing
Final Report:

• Jackson Co. Food borne outbreak (KY12-047) – March 6\textsuperscript{th} 2012 – \textit{C. Perfringens} – bacterial pathogen found in food item

• Beef enchiladas – main course was culprit!

• 4 stool samples – submitted to DLS – all positive & 100% match \textit{C. Perfringens} found in food items
PFGE IMAGES:

- PFGE Pattern *C. perfringens* isolates
- Food isolate Lane 2
- Patient isolate Lane 3
- Lane 1 & 4 = Standard markers
- All isolates had same matching pattern
PFGE IMAGES:
Acknowledgements:

• Doug Thoroughman – guidance during outbreak
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• Shawn Reynolds – collection food samples
• Division Lab Services – especially Shawn Benton, Lucinda Mitchell, and the DLS PFGE lab staff.
Questions: ?