The presentation will begin shortly.

Stealthy Situation

Tabletop Exercise

NORTH DAKOTA DEPARTMENT of HEALTH FDA FSIS

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Foodservice Investigation

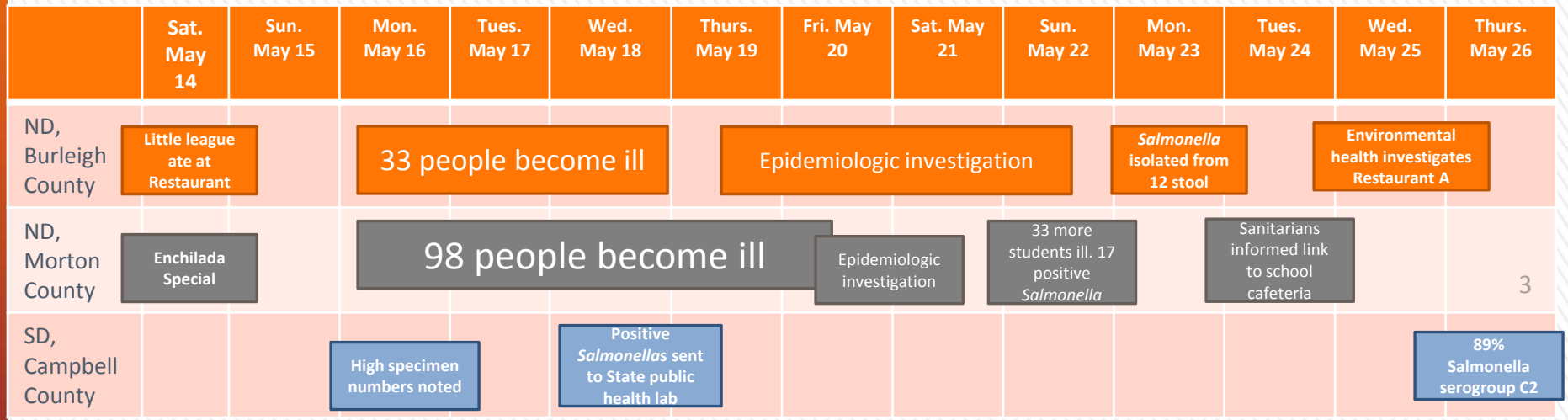
» Review

> Analysis of Little Leaguers and other Burleigh County victims' hypothesis-generating interviews points to the Mexican restaurant.

> Doctors in Burleigh County contacts health department after seeing spike in patients with Salmonellosis.

> Hypothesis-generating interviews of college students in Morton County begin. Cafeteria food is suspected.

> Private lab in Campbell County in SD notes the unusual increase in *Salmonella* of the same serogroup (C2) and contacts the State lab.



Foodservice Investigation: Burleigh County, North Dakota

Wednesday, May 25

- Environmental Health reviewed prior inspection reports for the Mexican restaurant. Visit restaurant. Request access to records.
- EHPs had conference call with epi staff.
- 10 additional stool samples positive for *Salmonella* serogroup C2.

Thursday, May 26

- EHPs investigate in-house prep process, raw material sources.
- Went over restaurant procedures and product assessment.
- Collected food samples for Salmonella analysis.
- The Mexican restaurant contacted suppliers to determine if they have received other reports of illness.
- Updated press, stating that *Salmonella* was the cause of the outbreak.
- Notified school of ongoing outbreak, possible link to restaurant.

Friday, May 27

- State public health lab informed epis and EHPs that PFGE patterns of original 12 isolates were uploaded to PulseNet database and all had matching pattern.

Ingredient	In-house Preparation	Supplier/Specification	Kill Step
Chicken tender strips	Place 5 lb. frozen pre-cooked seasoned chicken strips in steamer for 20 minutes. Hold on steam table for no more than 4 hours for use.	Continental Foodservice Distributors; 20 lb. case of Peabody Poultry company frozen fully cooked seasoned chicken tenders	Fully cooked by processor to 165F.
Shredded Iceberg Lettuce	Open bag and store in clean combo container in walk-in until use in the line. Hold on cold line for no more than 6 hours.	Continental Foodservice Distributors; Produce Queen brand; 5 lb. bag of pre-washed chopped iceberg lettuce.	Disinfecting was by processor; no kill step.
Shredded Cheddar Jack Cheese	Open bag and store in clean combo bin in walk-in until use on the line. Hold on the cold line for no more than 6 hours.	Continental Foodservice Distributors; 3 lb. bag of Lechers brand 1/8-inch shredded Cheddar and Monterey Jack Blend.	Pasteurized by processors
Corn Tortillas	Store at room temperature, between 50-70F. Warm in warming drawer before use.	Continental Foodservice Distributors; produced by Mamacitia's Tortilla Factory, fried corn tortillas; 12 to a sleeve, 48/case.	Baked at processor
Green Chili Salsa	Open bag and store in clean combo bin in walk-in until use. Hold on the cold line for no more than 6 hours.	Continental foodservice Distributors; Fresh salsa; produced by Miguel's Mexican Specialties fresh and refrigerated; ½ gallon bags; 2 bags per case.	No thermal kill step; pH 5.9
Beans	Place frozen package in the steamer to heat for 45 minutes. Hold on steam table for no more than 4 hours.	Continental Foodservice Distributors; Refried beans produced by Miguel's Mexican Specialties; vacuum packaged and frozen. 5 lb. beans per package; 2 packages/case	Heated to 165F by processor
Rice	Place 5 lb. frozen rice in steam table pan in steamer for 30 minutes. Hold on steam table for no more than 4 hours.	Continental Foodservice Distributors; produced by Specialty Rice Company; 20 lb. case frozen pre-cooked rice	Fully cooked to 190F by processor.
Chips	Open package, place in serving bowls and deliver to table.	Continental Foodservice Distributors; Mamacita's Tortilla Factory, corn tortilla chips; 2 lb. bag; 4 bags/case	Fried by processor.
Ice Cream Mix	Follow manufacturer's instructions on the soft serve machine to freeze the mix.	Continental Foodservice Distributors; Denny's Dairy ultra-pasteurized frozen soft serve ice cream mix; vanilla.	Pasteurized by processor
Ice Cream Topping; Fudge and Caramel	Place in stainless steel topping pumps.	Continental Foodservice Distributors; Albert's brand chocolate and caramel topping; 1 gallon/case	Thermally processed y processor; a_w 0.83
Whipped Cream	Store refrigerated. Shake before use.	Continental Foodservice Distributors; refrigerated canned whipped cream topping; 8 cans/case	Pasteurized by processor.

Food Samples Collected

- Frozen Chicken Tender Strips; unopened case; lot code 987-6
- Shredded Iceberg Lettuce; sealed bag; processing date 05/23
- Shredded Cheddar Jack Cheese; combo bin in the walk-in; no lot code
- Shredded Cheddar Jack Cheese; unopened 3 lb. bag; lot code 0145
- Corn Tortillas; unopened sleeve; production date 05/15
- Green Chili Salsa; plastic container in the walk-in ; no lot code
- Green Chili Salsa; unopened bag; production date 05/18
- Beans; unopened frozen package; production date 05/02
- Rice; unopened case; lot code 03312011AB
- Chips; unopened bag; production date 05/12
- Ice Cream Mix; unopened bag; lot code 1104301050am

Foodservice Investigation: Morton County, North Dakota

Wednesday , May 25

- EHPs visited college cafeteria. Reviewed prior inspection reports and noticed some deficiencies in past 3 years.
- Focused on hygiene practices, cooking, cooling and holding temps, sanitation and cross-contamination and raw material supply. Requested various records.
- Noted following deficiencies
  - Handwashing sink out of soap and paper towels
  - Temp of iceberg lettuce and green peppers on salad bar were 48F and 50F
  - Salad dressing past use-by date
- Samples of foods collected. Did not have green chili salsa left.
- College administration to serve pre-packaged prepared foods until source identified.
- Continue to provide media updates.

Friday, May 26

- State public health lab called epidemiologists that PFGE results for initial 17 samples were a match and uploaded to PulseNet.

Ingredient	In-house Preparation	Supplier/Specification	Kill-step
Self-Service Salad Bar Produce	Open bag and place in cold holding salad bar unit in stainless steel pans.	Continental Foodservice Distributors; Produce Queen Brand; 5 lb. bag of pre-washed iceberg lettuce, onions, green peppers, mushrooms	Disinfecting wash by supplier; no kill step
Salad Dressing	Open plastic jar, transfer to clean pump bottle and place on the line.	Continental Foodservice Distributors; Violetta's ½ gallon jars; 2/case	<pH 3.8
Shredded Ranchero Cheese	Open bag and place in cold holding salad bar unit in stainless steel pans.	Continental Foodservice Distributors; 3 lb. bag of Madison's Pasture 1/8 inch shredded Cheddar and Monterey Jack Blend.	Pasteurized at processor
Chicken Tender Strips	Place 5 lb. frozen pre-cooked seasoned chicken tender strips in steamer for 20 minutes. Hold on steam table for no more than 4 hours for use.	Continental Foodservice Distributors; 20 lb. case of Peabody Poultry company frozen fully cooked seasoned chicken tenders.	Fully cooked by processor to 165F
Flour Tortillas	Store at room temperature, between 50-70F. Warm in warming drawer before use.	Continental Foodservice Distributors; produced by Mamacita's Tortilla Factory, flour tortillas; 12 to a sleeve, 48/case	Baked at processor
Tomatillo Salsa	Open bag and store in clean combo bin in walk-in until use. Hold on the cold line for no more than 6 hours.	Continental foodservice Distributors; Fresh tomatillo salsa, produced by Juanita's Fresh Sauces and Soups; refrigerated; ½ gallon bags; 2 bags per case	No heat kill step; pH 5.8
Rice	Place 5 lb. frozen rice in steam table pan in steamer for 30 minutes. Hold on steam table for no more than 4 hours.	Continental Foodservice Distributors; produced by Specialty Rice Company; 20 lb. case frozen pre-cooked rice.	Fully cooked to 190F by processor.
Chips	Open package; place in steam table pan for plating.	Continental Foodservice Distributors; produced by Mamacitia's Tortilla Factory, corn tortilla chips; 2 lb. bag; 4 bags/case	Fried at processor
Scrambled Eggs	Open box of liquid pasteurized eggs and scramble. Hold on steam table for no more than 4 hours.	Continental Foodservice Distributors; produced by Healthy Liquid Pasteurized Egg Company; 1 gallon bag-in-box; 2 per case.	Pasteurized at processor
Roast Beef	Open package of sliced roast beef. Store on cold line for no more than 4 hours.	Continental Foodservice Distributors; produced by Best Deli Meats, Inc. 2 lb. per package; 5 packages/case	Fully cooked at processor to 145F
Mustard	Place squeeze bottle on sandwich line	Continental Foodservice Distributors; 6 1 qt squeeze bottles/case	< pH 4.6
Wheat Bread	Open package and remove slices as needed.	Continental Foodservice Distributors; Wheat Bread; 4 loaves/case	Baked at processor

Food Samples Collected

- Shredded iceberg lettuce from the salad bar
- Unopened packaged iceberg lettuce
- Roast beef on sandwich line
- Unopened ranchero cheese
- Unopened frozen chicken strips
- Steam chicken strips of the hot holding line

Foodservice Investigation: Campbell County, South Dakota

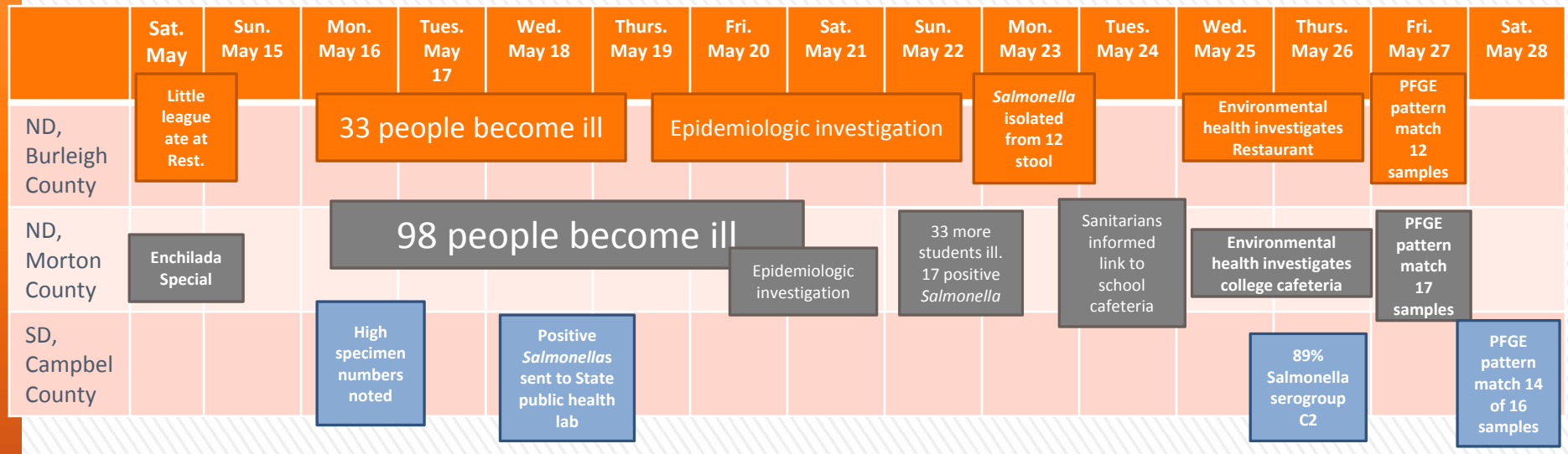
Saturday, May 28

- State public health lab serotyped and conducted PFGE analysis on the 16 isolates and 14 had matching PFGE patterns and serotypes.
- Two counties where majority of confirmed cases existed were prepared to conduct interviews to try to identify a common source.

Developments

- Mexican restaurant and Community college cafeteria were inspected by respective authorities
  - Both establishments provided product-specific information and provided food samples for analysis
  - Both establishments provided records of suppliers, recipes, meals served, food preparation practices and employee absenteeism
  - Community College decided to serve only pre-packaged, prepared foods
- Conference calls were conducted
- PFGE patterns uploaded to PulseNet appeared to match
- Communication with local media continued
- Epidemiologists in two counties in South Dakota prepared to interview cases

Foodservice Investigation: Timeline



Questions for Laboratorians

- Are there systems in place to preliminarily identify clusters of PFGE patterns that appear to be a match? If so, what are they? To whom are results communicated and what actions are expected?
- Are there communication channels with private laboratories, either by calling or blast fax to make them aware of an ongoing event and to maintain dialogue during an event of this type without compromising confidentiality?

Questions for Laboratorians

- What is the turnaround and processing time for the PFGE analysis and serotyping of Salmonella? What is your PFGE capacity and do you typically batch them together for efficiency?
- Understanding the resource constraints, is it possible that the laboratory analytical process could delay identification of clusters in ongoing outbreaks?
- What are the limitations of molecular analysis of this type? How can you rapidly further characterize the isolates?

Questions for Nurses

» If new cases are still being reported, what, if any, actions are you taking at this point?

Questions for Epidemiologists

- How are you made aware of the PFGE results? How frequently are you provided with updates?
- How do you communicate with the CDC when a situation is evolving like this one? Other than uploading PFGE images to PulseNet, would CDC have already been engaged? If so, how?
- What if the private laboratory had used the rapid test methods to confirm the *Salmonella*, but no isolates were available for serology or PFGE? How would that change your investigation?
- Based on the data presented, was there anything identified so far in the on-site investigation and record review of either foodservice facility that would raise a red flag to you?

Questions for Environmental Health

- Are there systems in place for dialogue with other regulatory agencies in neighboring jurisdictions in your state and between the state and local officials? If no systems are in place, how would your agency communicate?
- Do you have routine periodic contact with your regulated industry to build rapport prior to a foodborne illness incident?
- What authority do you have to collect food samples? How do you know which food samples to collect?
- How can regulators reach out and engage the regulated industry as soon as possible? What information sharing boundaries or constraints exist?

Questions for Regulatory Agencies

- Who maintains a list of contacts and backup contacts in other agencies (Federal, state and local) that would be partners dealing with a food-related human health emergency?
- Who maintains a library of legislative and administrative authorities that may be used by your agency in the event of a human health emergency?

Questions for Public Information Officers

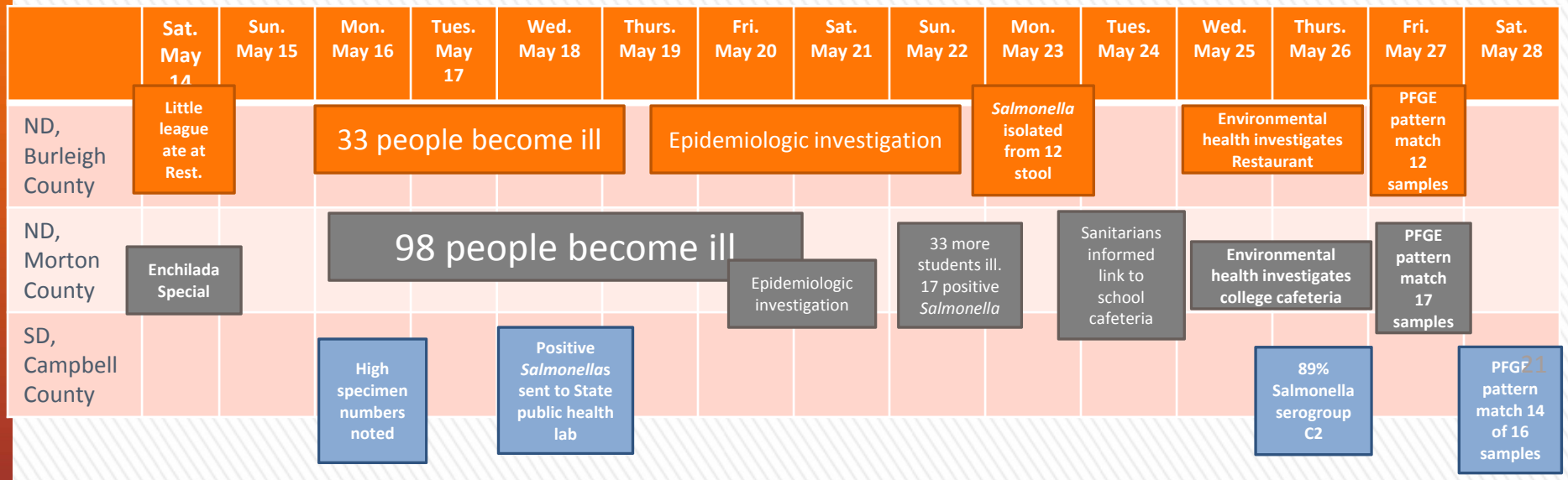
- If a restaurant is mentioned in the media, even without a definitive association with the outbreak, what can you do, if anything, to minimize the backlash to the chain and the brand damage at this point?
- Once the public health epidemiology group, the laboratory group and the sanitarians are all engaged in this investigation (and each from different agencies or organizations), how do you streamline communications (both inquiries and outgoing messaging) to be consistent and be perceived by your citizens as speaking with one voice from the "government"?

Questions for Emergency Preparedness and Response

- Is now the point when the Department Operations Center (DOC) would be set up?
- What could the DOC provide at this point (i.e., set up hot line to answer phone calls)?

Agency Collaboration

- The Mexican Restaurant and Community college cafeteria were inspected by respective authorities
  - Both establishments provided product-specific information and provided food samples for analysis
  - Restaurant provided records of suppliers, recipes, meals served, food preparation practices and employee absenteeism
  - Community College decided to serve only pre-packaged, prepared foods
- Conference calls were conducted
- PFGE patterns uploaded to PulseNet appeared to match
- Communication with local media continued
- Epidemiologists in two counties in South Dakota prepared to interview cases



Agency Collaboration: North Dakota, South Dakota, Montana and the CDC - May 30

- ND public health laboratory noted that the 10 recent uploads from Burleigh County and 17 from Morton County appeared to match each other. Lab contacted PulseNet team at CDC.
- PulseNet team also noted 24 recent uploads of the same pattern from SD and 8 from Montana. Serotyping confirmed isolates as *Salmonella* serotype Muenchen.
- Conference call held with ND, SD, Montana and CDC PulseNet and OutbreakNet teams.
- OutbreakNet team suggests group speak again the next day and that the FSIS and the DHHS FDA embedded liaisons to CDC participate.
- CDC distributes a nationwide Epi-X notification to all state and county health departments to raise awareness of this outbreak.

What are embedded agency liaisons?

» The Federal agencies (in this case CDC, FDA and FSIS) each have employees physically located at the other agencies to serve as liaisons. In this case, both FDA and USDA employees are stationed at CDC headquarters in Atlanta, GA., and a CDC employee is stationed at FDA headquarters in Washington, D.C. Their role is to facilitate communication and collaboration between the agencies.

What is Epi-X?

» The Epidemic Information Exchange (Epi-X) is the CDC's secure, web-based communications network that serves as a powerful communications exchange between CDC, state and local health departments, poison control centers and other public health professionals. The system provides rapid reporting, immediate notification, editorial support and coordination of health investigations for public health professionals.

Agency Collaboration: ND, SD, Montana, CDC, FSIS and FDA- May 31

- Conference call with ND, SD, Montana, CDC, FSIS and FDA
  - North Dakota discussed Little League cluster and association to the Mexican restaurant in Burleigh County. Indicated food samples were being analyzed at the State lab. Cases still being reported as of May 26.
  - ND not aware of any new cases since May 22 in Morton County. Main cluster at college cafeteria and food samples were at the lab. Chicken enchilada dinner special only offered through May 20.
  - ND reported that the commonalities between the 2 counties outbreaks include:
    - Pre-cooked chicken tender strips, shredded iceberg lettuce, different types of tortillas and chips from the same processor, green chili salsa and rice.
  - South Dakota reported that they had significant increase in samples submitted for PFGE analysis, sporadic cases spread over 5 counties in the state.

Agency Collaboration: ND, SD, Montana, CDC, FSIS and FDA- May 31

- Montana reported analysis of any *Salmonella* in the PFGE process would be expedited and cases were to be interviewed.
- FSIS committed to conducting an investigation at the poultry processor that produced the chicken strips.
- FDA committed to reviewing the information for the processors of the produce, tortillas, cheese, salsa and rice and to contact cheese manufacturers to determine if 2 cheeses were made in same facility.
- CDC would begin to post case counts and epidemiological curve on their website.
- FDA and FSIS to issue a statement indicating that the outbreak was under investigation and released to regional media.
- Another conference call to be held in 48 hours.

Agency Collaboration: North Dakota, South Dakota, Montana, CDC, FSIS and FDA- June 2

- SD uploaded 22 *Salmonella* patterns, 20 of which matched the *S*. Muenchen ones related to this outbreak. ND submitted 11 more matches and Montana had 6 more. Two matches to this PFGE pattern from food surveillance sampling.
  - One from flour in 2008 and one from cilantro in 2009.
- Conference call with ND, SD, Montana,CDC, FSIS and FDA
  - North Dakota continuing interviews and suggested a case-control study

What is a case-control study?

» Investigators analyze information they collect from ill persons and comparable well persons to see whether ill persons are more likely than people who did not get sick to have eaten a certain food or to report a particular exposure. If eating a particular food is reported more often by sick people than by well people, it may be associated with illness. Using statistical tests, the investigators can determine how strong this association is, how likely it is to have occurred by chance alone and whether more than one food might be involved.

Agency Collaboration: North Dakota, South Dakota, Montana, CDC, FSIS and FDA- June 2

- South Dakota interviews were underway. Indicated that there were not any of the Mexican restaurant chain units in the state. Interviewees did have both poultry product exposure in foodservice and Tex-Mex cuisine exposure.
- Montana interviews were underway.
- FSIS investigation of the poultry processor indicated no deficiencies or positive samples to date. Samples of finished product collected as precaution.
- FDA stated that the two cheese types on the Burleigh and Morton County lists were not made by the same processor or in the same production facility.

» Based on the past history of outbreaks and type of food processing, there was discussion centering on the possibility of iceberg lettuce, chicken or salsa and ingredients as the vehicles.

Developments

- CDC OutbreakNet engaged and conference call with three states conducted.
- Multi-agency (CDC, FDA and FSIS) and multi-state conference call conducted.
- CDC issued a nationwide notification to public health agencies.
- FDA and USDA FSIS released a statement to the regional media regarding the outbreak.
- Case control study initiated.
- Investigation focused on chicken, salsa and iceberg lettuce.

Agency Collaboration: Timeline

	Sat. May 14	Sun. May 15	Mon. May 16	Tues. May 17	Wed. May 18	Thurs. May 19	Fri. May 20	Sat. May 21	Sun. May 22	Mon. May 23	Tues. May 24	Wed. May 25	Thurs. May 26	Fri. May 27	Sat. May 28	Sun. May 29	Mon. May 30	Tues. June 1	Wed. June 2
Burleigh County	Little league ate at Rest.		33 people become ill				Epidemiologic investigation			*Sal.* isolated from 12 stool		Environmental health investigates Restaurant		PFGE pattern match 12 samples			10 uploads match		11 more matches from ND
Morton County	Enchilada Special		98 people become ill					Epidemiologic investigation		33 more students ill. 17 positive *Salmonella*		Environmental health investigates college cafeteria		PFGE pattern match 17 samples			17 uploads match		
SD			High specimen numbers noted		Positive *Salmonellas* sent to State public health lab								89% Salmonella serogroup C2		PFGE pattern match 14 of 16 samples		24 uploads match		20 more matches
MT																	8 uploads match		
Multi-agency																	Con. Call		Con. Call

Questions for Laboratorians

- How often do you upload information to PulseNet? What is a best practice in terms of regular review and analysis of PulseNet data for your jurisdiction? Would an outbreak alter your practices?
- What policies and procedures govern the prioritization of sample analysis?

Questions for Epidemiologists

- How hard is it to change or update from using your own questionnaire and move to a common questionnaire? In a multi-state outbreak, how can we commonly test hypotheses across jurisdictions to have meaningful, consistent data to analyze?
- If interviews are well underway in other states, would their results influence your investigation? If so, how? When interviewing cases, do you harmonize your efforts with those of other jurisdictions? What policies, processes or guidelines govern your approach to the investigation?

Questions for Environmental Health

- How systematic is the collaboration between your organization and the laboratories testing food samples to influence prioritization of work? What rules or processes govern this relationship?
- How might the information shared during a multi-state conference call influence your investigation?
- What information would you expect from the Federal agencies at this point in the investigation?
- How do you maintain dialogue with the facilities you are investigating? How quickly are they made aware of the findings of the investigation? Are there components of an investigation that cannot be shared with firms under investigation?

Questions for Public Information Officers

» Once a localized outbreak is then recognized as a multi-state outbreak, how can the local and state public affairs staff coordinate with the Federal risk communicators to harmonize messages and collaborate?

The End

- Recording of this training can be found at www.ndhealth.gov/disease/GI/training

- Nurses and EHPs interested in continuing education credit, post-test will be available following the third session on 3/12/2014.
  - Successfully complete the post-test to receive your certificate.

- Tomorrow, 3/12/2014 at 8:15 a.m.
  - Module 5 – Traceback
  - Wrap-up