

EXERCISE

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9. Etiology: (Name the bacteria, virus, parasite, or toxin. If available, include the serotype and other characteristics such as phage type, virulence factors, and metabolic profile)				
Detected In		Other Characteristics		
Etiology		Serotype	(e.g., phage type)	(See codes just below)
1) Shigella	<input checked="" type="checkbox"/> Confirmed			1
2)	<input type="checkbox"/> Confirmed			
3)	<input type="checkbox"/> Confirmed			
<input type="checkbox"/> Etiology undetermined				
Detected In (List above all that apply)				
1 - Patient Specimen(s)		3 - Environment specimen(s)		
2 - Food Specimen(s)		4 - Food Worker specimen(s)		
10. Isolate Subtype				
State Lab ID	PFGE (PulseNet designation)	PFGE (PulseNet designation)		
1)				
2)				
3)				
11. Contributing Factors (Check all that apply. See attached codes and explanations)				
<input type="checkbox"/> Contributing factors unknown				
Contamination Factor				
<input type="checkbox"/> C1 <input type="checkbox"/> C2 <input type="checkbox"/> C3 <input type="checkbox"/> C4 <input type="checkbox"/> C5 <input type="checkbox"/> C6 <input type="checkbox"/> C7 <input type="checkbox"/> C8 <input type="checkbox"/> C9 <input type="checkbox"/> C10 <input type="checkbox"/> C11 <input type="checkbox"/> C12 <input type="checkbox"/> C13 <input type="checkbox"/> C14 <input type="checkbox"/> C15 (describe in Comments) <input type="checkbox"/> N/A				
Proliferation/Amplification Factor (bacterial outbreaks only)				
<input type="checkbox"/> P1 <input type="checkbox"/> P2 <input type="checkbox"/> P3 <input type="checkbox"/> P4 <input type="checkbox"/> P5 <input type="checkbox"/> P6 <input type="checkbox"/> P7 <input type="checkbox"/> P8 <input type="checkbox"/> P9 <input type="checkbox"/> P10 <input type="checkbox"/> P11 <input type="checkbox"/> P12 (describe in Comments) <input type="checkbox"/> N/A				
Survival Factor (microbial outbreaks only)				
<input type="checkbox"/> S1 <input type="checkbox"/> S2 <input type="checkbox"/> S3 <input type="checkbox"/> S4 <input type="checkbox"/> S5 (describe in Comments) <input type="checkbox"/> N/A				
<input type="checkbox"/> Was food-worker implicated as the source of contamination? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If yes, please check only one of following				
<input type="checkbox"/> laboratory <i>and</i> epidemiologic evidence				
<input type="checkbox"/> epidemiologic evidence (w/o lab confirmation)				
<input type="checkbox"/> lab evidence (w/o epidemiologic evidence)				
<input type="checkbox"/> prior experience makes this the likely source (please explain in Comments)				

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Part 2: Additional Information																																																			
12. Symptoms, Signs and Outcomes <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Feature</th> <th style="width: 20%;">Cases with outcome/feature</th> <th style="width: 50%;">Total cases for whom you have information available</th> </tr> </thead> <tbody> <tr> <td>Healthcare provider visit</td> <td style="text-align: center;">6</td> <td style="text-align: center;">4</td> </tr> <tr> <td>Hospitalization</td> <td></td> <td></td> </tr> <tr> <td>Death</td> <td></td> <td></td> </tr> <tr> <td>Vomiting</td> <td style="text-align: center;">7</td> <td style="text-align: center;">4</td> </tr> <tr> <td>Diarrhea</td> <td style="text-align: center;">8</td> <td style="text-align: center;">4</td> </tr> <tr> <td>Bloody stools</td> <td style="text-align: center;">4</td> <td style="text-align: center;">4</td> </tr> <tr> <td>Fever</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Abdominal cramps</td> <td></td> <td></td> </tr> <tr> <td>HUS or TTP</td> <td></td> <td></td> </tr> <tr> <td>Asymptomatic</td> <td></td> <td></td> </tr> <tr> <td>*</td> <td></td> <td></td> </tr> <tr> <td>*</td> <td></td> <td></td> </tr> <tr> <td>*</td> <td></td> <td></td> </tr> </tbody> </table>			Feature	Cases with outcome/feature	Total cases for whom you have information available	Healthcare provider visit	6	4	Hospitalization			Death			Vomiting	7	4	Diarrhea	8	4	Bloody stools	4	4	Fever	2	2	Abdominal cramps			HUS or TTP			Asymptomatic			*			*			*			13. Incubation Period (Circle appropriate units) Shortest <u>13 H</u> (Hours, Days) Longest <u>36H</u> (Hours, Days) Median <u>18H</u> (Hours, Days) <input type="checkbox"/> Unknown		14. Duration of Illness (Among those who recovered) (Circle appropriate units) Shortest _____ (Hours, Days) Longest _____ (Hours, Days) Median _____ (Hours, Days) x Unknown				
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15. If Cohort Investigation Conducted: <div style="text-align: center;"> Attack rate* = $\frac{\text{Exposed and ill}}{\text{Total number exposed for whom you have illness information}} \times 100 = \text{_____}\%$ </div> <small>* The attack rate is applied to persons in a cohort who were exposed to the implicated vehicle. The numerator is the number of persons who were exposed and became ill; the denominator is the total number of persons exposed to the implicated vehicle. If the vehicle is unknown, then the attack rate should not be calculated.</small>																																																			
16. Location Where Food Was Prepared (Check all that apply) <table style="width: 100%;"> <tr> <td><input type="checkbox"/> Restaurant or deli</td> <td><input type="checkbox"/> Nursing home</td> </tr> <tr> <td><input type="checkbox"/> Day care center</td> <td><input type="checkbox"/> Prison, jail</td> </tr> <tr> <td><input type="checkbox"/> School</td> <td><input type="checkbox"/> Private home</td> </tr> <tr> <td><input type="checkbox"/> Office setting</td> <td><input type="checkbox"/> Workplace, not cafeteria</td> </tr> <tr> <td><input type="checkbox"/> Workplace cafeteria</td> <td><input type="checkbox"/> Wedding reception</td> </tr> <tr> <td>X Banquet Facility</td> <td><input type="checkbox"/> Church, temple, etc</td> </tr> <tr> <td><input type="checkbox"/> Picnic</td> <td><input type="checkbox"/> Camp</td> </tr> <tr> <td><input type="checkbox"/> Caterer</td> <td><input type="checkbox"/> Contaminated food imported into U.S.</td> </tr> <tr> <td><input type="checkbox"/> Grocery Store</td> <td><input type="checkbox"/> Hospital</td> </tr> <tr> <td colspan="2"><input type="checkbox"/> Fair, festival, other temporary/ mobile services</td> </tr> <tr> <td colspan="2"><input type="checkbox"/> Commercial product, served without further preparation</td> </tr> <tr> <td colspan="2"><input type="checkbox"/> Unknown or undetermined</td> </tr> <tr> <td colspan="2"><input type="checkbox"/> Other (Describe) _____</td> </tr> </table>		<input type="checkbox"/> Restaurant or deli	<input type="checkbox"/> Nursing home	<input type="checkbox"/> Day care center	<input type="checkbox"/> Prison, jail	<input type="checkbox"/> School	<input type="checkbox"/> Private home	<input type="checkbox"/> Office setting	<input type="checkbox"/> Workplace, not cafeteria	<input type="checkbox"/> Workplace cafeteria	<input type="checkbox"/> Wedding reception	X Banquet Facility	<input type="checkbox"/> Church, temple, etc	<input type="checkbox"/> Picnic	<input type="checkbox"/> Camp	<input type="checkbox"/> Caterer	<input type="checkbox"/> Contaminated food imported into U.S.	<input type="checkbox"/> Grocery Store	<input type="checkbox"/> Hospital	<input type="checkbox"/> Fair, festival, other temporary/ mobile services		<input type="checkbox"/> Commercial product, served without further preparation		<input type="checkbox"/> Unknown or undetermined		<input type="checkbox"/> Other (Describe) _____		17. Location of Exposure or Where Food Was Eaten (Check all that apply) <table style="width: 100%;"> <tr> <td><input type="checkbox"/> Restaurant or deli</td> <td><input type="checkbox"/> Nursing Home</td> </tr> <tr> <td><input type="checkbox"/> Day care center</td> <td><input type="checkbox"/> Prison, jail</td> </tr> <tr> <td><input type="checkbox"/> School</td> <td><input type="checkbox"/> Private home</td> </tr> <tr> <td><input type="checkbox"/> Office Setting</td> <td><input type="checkbox"/> Workplace, not cafeteria</td> </tr> <tr> <td><input type="checkbox"/> Workplace cafeteria</td> <td><input type="checkbox"/> Wedding Reception</td> </tr> <tr> <td>X Banquet Facility</td> <td><input type="checkbox"/> Church, temple, etc.</td> </tr> <tr> <td><input type="checkbox"/> Picnic</td> <td><input type="checkbox"/> Camp</td> </tr> <tr> <td><input type="checkbox"/> Grocery Store</td> <td><input type="checkbox"/> Hospital</td> </tr> <tr> <td colspan="2"><input type="checkbox"/> Fair, festival, temporary/ mobile service</td> </tr> <tr> <td colspan="2"><input type="checkbox"/> Unknown or undetermined</td> </tr> <tr> <td colspan="2"><input type="checkbox"/> Other (Describe) _____</td> </tr> </table>		<input type="checkbox"/> Restaurant or deli	<input type="checkbox"/> Nursing Home	<input type="checkbox"/> Day care center	<input type="checkbox"/> Prison, jail	<input type="checkbox"/> School	<input type="checkbox"/> Private home	<input type="checkbox"/> Office Setting	<input type="checkbox"/> Workplace, not cafeteria	<input type="checkbox"/> Workplace cafeteria	<input type="checkbox"/> Wedding Reception	X Banquet Facility	<input type="checkbox"/> Church, temple, etc.	<input type="checkbox"/> Picnic	<input type="checkbox"/> Camp	<input type="checkbox"/> Grocery Store	<input type="checkbox"/> Hospital	<input type="checkbox"/> Fair, festival, temporary/ mobile service		<input type="checkbox"/> Unknown or undetermined		<input type="checkbox"/> Other (Describe) _____	
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18. Trace back <input type="checkbox"/> Please check if trace back conducted Source to which trace back led:																																																			
Source (e.g., Chicken farm, Tomato processing plant)	Location of Source <table style="width: 100%;"> <tr> <th style="width: 50%;">State</th> <th style="width: 50%;">Country</th> </tr> <tr> <td style="height: 20px;"></td> <td></td> </tr> <tr> <td style="height: 20px;"></td> <td></td> </tr> </table>		State	Country					Comments																																										
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19. Recall <input type="checkbox"/> Please check if any food product recalled Recall Comments _____ _____ _____ _____	20. Available Reports (Please attach) <input type="checkbox"/> Unpublished agency report <input type="checkbox"/> Epi-Aid report <input type="checkbox"/> Publication (please reference if not attached) _____ _____
21. Agency reporting this outbreak Smallville Health Department _____ Contact person: Name _____ Dr. Clarice Stevens _____ Title _____ Epidemiologist _____ Phone _____ 213-240-xxxx _____ Fax _____ 213-240-xxxx _____ E-mail _____	22. Remarks Briefly describe important aspects of the outbreak not covered above (e.g., restaurant closure, immunoglobulin administration, economic impact, etc) Planning meeting for Smallville College's upcoming reunion. Eight of the 15 people in attendance at the meeting became ill following the meeting. The meeting included continental breakfast and a box lunch. The only uncooked food item that all of the ill persons ate at the meeting was the coleslaw. No other reports of illness from other meetings at the hotel on that day.

Part 3: School Questions

1. Did the outbreak involve a single or multiple schools? <input type="checkbox"/> Single <input type="checkbox"/> Multiple (If yes, number of schools _____)	
2. School characteristics (for all involved students in all involved schools) a. Total approximate enrollment _____ (number of students) <input type="checkbox"/> Unknown or Undetermined b. Grade level(s) (Please check all grades affected) <input type="checkbox"/> Preschool <input type="checkbox"/> Grade School (grades K-12) Please check all grades affected: <input type="checkbox"/> K <input type="checkbox"/> 1st <input type="checkbox"/> 2nd <input type="checkbox"/> 3rd <input type="checkbox"/> 4th <input type="checkbox"/> 5th <input type="checkbox"/> 6th <input type="checkbox"/> 7th <input type="checkbox"/> 8th <input type="checkbox"/> 9th <input type="checkbox"/> 10th <input type="checkbox"/> 11th <input type="checkbox"/> 12th <input type="checkbox"/> College/University/Technical School <input type="checkbox"/> Unknown or Undetermined c. Primary funding of involved school(s) <input type="checkbox"/> Public <input type="checkbox"/> Private <input type="checkbox"/> Unknown or Undetermined	
3. Describe the preparation of the implicated item: <input type="checkbox"/> Heat and serve (item mostly prepared or cooked off-site, reheated on-site) <input type="checkbox"/> Served a-la-carte <input type="checkbox"/> Serve only (preheated or served cold) <input type="checkbox"/> Cooked on site using primary ingredients <input type="checkbox"/> Provided by a food service management company <input type="checkbox"/> Provided by a fast food vendor <input type="checkbox"/> Provided by a pre-plate company <input type="checkbox"/> Part of a club/ fundraising event <input type="checkbox"/> Made in the classroom <input type="checkbox"/> Brought by a student/teacher/parent <input type="checkbox"/> Other _____ <input type="checkbox"/> Unknown or Undetermined	4. How many times has the state, county or local health department inspected this school cafeteria or kitchen in the 12 months before the outbreak?* <input type="checkbox"/> Once <input type="checkbox"/> Twice <input type="checkbox"/> More than two times <input type="checkbox"/> Not inspected <input type="checkbox"/> Unknown or Undetermined 5. Does the school have a HACCP plan in place for the school feeding program?* <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown or Undetermined *If there are multiple schools involved, please answer according to the most

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	affected school
6. Was implicated food item provided to the school through the National School Lunch/Breakfast Program? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown or Undetermined	If Yes, Was the implicated food item donated/purchased by : <input type="checkbox"/> USDA through the Commodity Distribution Program <input type="checkbox"/> Purchased commercially by the state/school authority <input type="checkbox"/> Other _____ <input type="checkbox"/> Unknown or Undetermined

Part 4: Ground Beef
<p>1. What percentage of ill persons (for whom information is available) ate ground beef raw or undercooked? _____%</p> <p>2. Was ground beef case ready? (Ground beef that comes from a manufacturer packaged for sale and not altered or repackaged by the retailer) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown or Undetermined</p> <p>3. Was the beef ground or reground by the retailer? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown or Undetermined</p> <p>If yes, was anything added to the beef during grinding (e.g., shop trim or any product to alter the fat content) _____</p>

Part 5: Mode of Transmission (Enterohemorrhagic <i>E. coli</i> or <i>Salmonella</i> Enteritidis only)
<p>1. Mode of Transmission (for greater than 50% of cases) <i>Select one:</i> <input checked="" type="checkbox"/> Food <input type="checkbox"/> Person to person <input type="checkbox"/> Swimming or recreational water <input type="checkbox"/> Drinking water <input type="checkbox"/> Contact with animals or their environment <input type="checkbox"/> Unknown or Undetermined</p>

Part 6: Additional Egg Questions
<p>1. Were Eggs: (Check all that apply) <input type="checkbox"/> in-shell, un-pasteurized? <input type="checkbox"/> in-shell, pasteurized? <input type="checkbox"/> liquid or dry egg product? <input type="checkbox"/> stored with inadequate refrigeration during or after sale? <input type="checkbox"/> consumed raw? <input type="checkbox"/> consumed undercooked? <input type="checkbox"/> pooled?</p> <p>2. If eggs traced back to farm, was <i>Salmonella</i> Enteritidis found on the farm? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown or Undetermined</p> <p>Comment: _____</p>

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Contamination Factors:¹

- C1 - Toxic substance part of tissue (e.g., ciguatera)
- C2 - Poisonous substance intentionally added (e.g., cyanide or phenolphthalein added to cause illness)
- C3 - Poisonous or physical substance accidentally/incidentally added (e.g., sanitizer or cleaning compound)
- C4 - Addition of excessive quantities of ingredients that are toxic under these situations (e.g., niacin poisoning in bread)
- C5 - Toxic container or pipelines (e.g., galvanized containers with acid food, copper pipe with carbonated beverages)
- C6 - Raw product/ingredient contaminated by pathogens from animal or environment (e.g., *Salmonella* enteritidis in egg, Norwalk in shellfish, *E. coli* in sprouts)
- C7 - Ingestion of contaminated raw products (e.g., raw shellfish, produce, eggs)
- C8 - Obtaining foods from polluted sources (e.g., shellfish)
- C9 - Cross-contamination from raw ingredient of animal origin (e.g., raw poultry on the cutting board)
- C10 - Bare-handed contact by handler/worker/preparer (e.g., with ready-to-eat food)
- C11 - Glove-handed contact by handler/worker/preparer (e.g., with ready-to-eat food)
- C12 - Handling by an infected person or carrier of pathogen (e.g., *Staphylococcus*, *Salmonella*, Norwalk agent)
- C13 - Inadequate cleaning of processing/preparation equipment/utensils leads to contamination of vehicle (e.g., cutting boards)
- C14 - Storage in contaminated environment leads to contamination of vehicle (e.g., store room, refrigerator)
- C15 - Other source of contamination (*please describe in Comments*)

Proliferation/Amplification Factors:¹

- P1 - Allowing foods to remain at room or warm outdoor temperature for several hours (e.g., during preparation or holding for service)
- P2 - Slow cooling (e.g., deep containers or large roasts)
- P3 - Inadequate cold-holding temperatures (e.g., refrigerator inadequate/not working, iced holding inadequate)
- P4 - Preparing foods a half day or more before serving (e.g., banquet preparation a day in advance)
- P5 - Prolonged cold storage for several weeks (e.g., permits slow growth of psychrophilic pathogens)
- P6 - Insufficient time and/or temperature during hot holding (e.g., malfunctioning equipment, too large a mass of food)
- P7 - Insufficient acidification (e.g., home canned foods)
- P8 - Insufficiently low water activity (e.g., smoked/salted fish)
- P9 - Inadequate thawing of frozen products (e.g., room thawing)
- P10 - Anaerobic packaging/Modified atmosphere (e.g., vacuum-packed fish, salad in gas-flushed bag)
- P11 - Inadequate fermentation (e.g., processed meat, cheese)
- P12 - Other situations that promote or allow microbial growth or toxic production (*please describe in Comments*)

Survival Factors:¹

- S1 - Insufficient time and/or temperature during initial cooking/heat processing (e.g., roasted meats/poultry, canned foods, pasteurization)
- S2 - Insufficient time and/or temperature during reheating (e.g., sauces, roasts)
- S3 - Inadequate acidification (e.g., mayonnaise, tomatoes canned)
- S4 - Insufficient thawing, followed by insufficient cooking (e.g., frozen turkey)
- S5 - Other process failures that permit the agent to survive (*please describe in Comments*)

Method of Preparation:²

- M1 - Foods eaten raw or lightly cooked (e.g., hard shell clams, sunny side up eggs)
- M2 - Solid masses of potentially hazardous foods (e.g., casseroles, lasagna, stuffing)
- M3 - Multiple foods (e.g., smorgasbord, buffet)
- M4 - Cook/serve foods (e.g., steak, fish fillet)
- M5 - Natural toxicant (e.g., poisonous mushrooms, paralytic shellfish poisoning)
- M6 - Roasted meat/poultry (e.g., roast beef, roast turkey)
- M7 - Salads prepared with one or more cooked ingredients (e.g., macaroni, potato, tuna)
- M8 - Liquid or semi-solid mixtures of potentially hazardous foods (e.g., gravy, chili, sauce)
- M9 - Chemical contamination (e.g., heavy metal, pesticide)
- M10 - Baked goods (e.g., pies, éclairs)
- M11 - Commercially processed foods (e.g., canned fruits and vegetables, ice cream)
- M12 - Sandwiches (e.g., hot dog, hamburger, Monte Cristo)
- M13 - Beverages (e.g., carbonated and non-carbonated, milk)
- M14 - Salads with raw ingredients (e.g., green salad, fruit salad)
- M15 - Other, does not fit into above categories (*please describe in Comments*)
- M16 - Unknown, vehicle was not identified

¹ Frank L. Bryan, John J. Guzewich, and Ewen C. D. Todd. Surveillance of Foodborne Disease III. Summary and Presentation of Data on Vehicles and Contributory Factors; Their Value and Limitations. Journal of Food Protection, 60; 6:701-714, 1997.

² Weingold, S. E., Guzewich JJ, and Fudala JK. Use of foodborne disease data for HACCP risk assessment. Journal of Food Protection, 57; 9:820-830, 1994.