

iMdoc#	lhd/wk/yr:	ob#	rec#	ed:	fd:
<b>Investigation of a Foodborne Outbreak</b>					
This form is used to report foodborne disease outbreak investigations to CDC via the electronic system. It is also used to report <i>Salmonella</i> Enteritidis and <i>E. coli</i> O157:H7 outbreak investigations involving any mode of transmission. <u>A foodborne outbreak* is defined as the occurrence of two or more cases of a similar illness resulting from the ingestion of a common food in the United States.</u> This form has 6 parts. Part 1 asks for the minimum or basic information needed and must be completed for the investigation to be counted in the CDC annual summary. Part 2 asks for additional information for any foodborne outbreak, while Parts 3 – 6 ask for information concerning specific vehicles or etiologies. Please complete as much of all parts as possible.					
 <p><b>E</b>lectronic <b>F</b>oodborne <b>O</b>utbreak <b>R</b>eporting <b>S</b>ystem</p>		CDC Use Only _____ STATE REVIEWER USE ONLY Agent and Status: _____ Vehicle Suspected: _____ Foodworker implicated? Y or N Death? Y or N School? _____			

**Part 1: Basic Information**

<p><b>1. Report Type</b></p> <p>A. Please check if this a final report _____</p> <p>B. Please check if data does not support a FOODBORNE outbreak _____</p>	<p><b>3. Dates</b> Please enter as many dates as possible</p> <p>Date first case became ill _____  <small>Month Day Year</small></p> <p>Date last case became ill _____  <small>Month Day Year</small></p> <p>Date first known exposure _____  <small>Month Day Year</small></p> <p>Date last known exposure _____  <small>Month Day Year</small></p> <p><i>IF onset is prior to the exposure date for the outbreak, please explain (e.g., ill foodhandler):</i></p>	<p><b>4. Location of Exposure</b></p> <p>Reporting state _____</p> <p>If multiple states involved:                  Exposure occurred in multiple states _____                  Exposure occurred in single state, but cases resided in multiple states _____                  Other states: _____</p> <p>Reporting county _____</p> <p>If multiple counties involved:                  Exposure occurred in multiple counties _____                  Exposure occurred in one county, but cases resided in multiple counties _____                  Other counties: _____</p>
<p><b>2. Number of Cases</b></p> <p>Lab-confirmed cases _____ (A)                  Including _____ secondary cases</p> <p>Probable cases _____ (B)                  Including _____ secondary cases</p> <p>Estimated total ill _____ (C)</p>		

<p><b>5. Approximate Percentage of Cases in Each Age Group</b></p> <p>&lt;1 year _____%    20-49 yrs _____%                  1-4 yrs _____%    ≥50 yrs _____%                  5-19 yrs _____%    Unknown _____%</p>	<p><b>6. Sex</b> (Estimated percent of the total cases)</p> <p>Male _____%                  Female _____%</p>	<p><b>7. Investigation Methods</b> (Check all that apply)</p> <p>Interviews of only cases _____ Case-control study _____                  Food preparation review _____ Cohort study _____                  Investigation at factory or production plant _____                  Investigation at original source (farm, marine estuary, etc.) _____                  Food product trace back _____                  Environment / food sample cultures _____</p>
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8. Implicated Food(s): (Please provide known information)				
Name of Food	Main Ingredient(s)	Contaminated Ingredient(s)	Reason(s) Suspected (See codes just below)	Method of Preparation (See attached codes)
e.g., Caesar Salad	e.g., lettuce, croutons, Parmesan cheese, home made egg-based dressing	e.g., Eggs	e.g., 4	e.g., M1
1)				
2)				
3)				

Food vehicle undetermined

Reason Suspected (List above all that apply)

1 - Statistical evidence from epidemiological investigation\*\*    4 - Other data (e.g., same phage type found on farm that supplied eggs)  
 2 - Laboratory evidence (e.g., identification of agent in food)    5 - Specific evidence lacking but prior experience makes it likely source  
 3 - Compelling supportive information

\*\* If reason suspected is (1) statistical evidence from epidemiological investigation, please provide a table with the statistical results for the case control or the cohort study. For each item investigated, include attack rate or % of cases and controls who consumed each item, OR/RR and confidence interval or p value for each item. Samples and tables of case control and cohort studies are available on IDB/SSS form site.

**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. Confirmation criteria available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5510a3.htm>)

Etiology	Confirmed Suspected	Serotype	Other Characteristics (e.g., phage type)	Detected In (Use codes 1,2,3,4 just below)
1)	Confirmed Suspected			
2)	Confirmed Suspected			
3)	Confirmed Suspected			

Etiology undetermined

Detected In (List above all that apply)

1 - Patient Specimen(s)    2 - Food Specimen(s)    3 -Environment 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)

**Contributing factors unknown**

**Contamination Factor**

C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13 C14 C15 (describe in Comments) N/A

**Proliferation/Amplification Factor (bacterial outbreaks only)**

P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 (describe in Comments) N/A

**Survival Factor (microbial outbreaks only)**

S1 S2 S3 S4 S5 (describe in Comments) N/A

**Was food-worker implicated as the source of contamination?**    Yes    No

If yes, please check **only one** of following

laboratory *and* epidemiologic evidence

epidemiologic evidence (w/o lab confirmation)

lab evidence (w/o epidemiologic evidence)

prior experience makes this the likely source (please explain in Comments)

## Part 2: Additional Information

12. Symptoms, Signs and Outcomes			13. Incubation Period	14. Duration of Illness	
Feature	Cases with outcome/feature	Total cases <sup>^</sup> for whom you have information available	(Circle appropriate units)		
Healthcare provider visit			Shortest _____ (Hours, Days)	Shortest _____ (Hours, Days)	
Hospitalization			Longest _____ (Hours, Days)	Longest _____ (Hours, Days)	
Death			Median _____ (Hours, Days)	Median _____ (Hours, Days)	
Vomiting			Unknown	Unknown	
Diarrhea			<b>* Use the following terms, if appropriate, to describe other common characteristics of cases</b>		
Bloody stools					
Fever					
Abdominal cramps					
HUS or TTP					
Asymptomatic					
*					
*			<b>Anaphylaxis</b> <b>Arthralgia</b> <b>Bradycardia</b> <b>Bullous skin lesions</b> <b>Coma</b> <b>Cough</b> <b>Descending paralysis</b> <b>Diplopia</b> <b>Flushing</b>	<b>Headache</b> <b>Hypotension</b> <b>Itching</b> <b>Jaundice</b> <b>Lethargy</b> <b>Myalgia</b> <b>Paresthesia</b> <b>Septicemia</b> <b>Sore throat</b>	<b>Tachycardia</b> <b>Temperature reversal</b> <b>Thrombocytopenia</b> <b>Urticaria</b> <b>Wheezing</b>

### 15. If Cohort Investigation Conducted:

Attack rate (for those exposed to the implicated vehicle)\* =  $\frac{\text{Exposed and ill}}{\text{Total number exposed for whom you have illness information}} \times 100 = \text{_____} \%$

\* 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.

16. Location Where Food Was Prepared	17. Location of Exposure or Where Food Was Eaten
(Check all that apply) Restaurant or deli      Nursing home Day care center      Prison, jail School      Private home Office setting      Workplace, not cafeteria Workplace cafeteria      Wedding reception Banquet Facility      Church, temple, etc Picnic      Camp Caterer      Contaminated food imported into U.S. Grocery Store      Hospital Fair, festival, other temporary/ mobile services Commercial product, served without further preparation Unknown or undetermined Other (Describe) _____	(Check all that apply) Restaurant or deli      Nursing Home Day care center      Prison, jail School      Private home Office Setting      Workplace, not cafeteria Workplace cafeteria      Wedding Reception Banquet Facility      Church, temple, etc. Picnic      Camp Grocery Store      Hospital Fair, festival, temporary/ mobile service Unknown or undetermined Other (Describe) _____

### 18. Trace back

Please check if trace back conducted

Source to which trace back led:

Source (e.g., Chicken farm, Tomato processing plant)	Location of Source State	Country	Comments

<p><b>19. Recall</b> Please check if any food product recalled</p> <p>Recall Comments _____</p>	<p><b>20. Available Reports</b> (Please attach)</p> <p>Unpublished agency report Epi-Aid report Publication (please reference if not attached)</p>
<p><b>21. Agency reporting this outbreak</b></p> <p>_____</p> <p><b>Contact person:</b> Name _____ Title _____ Phone _____ Fax _____ E-mail _____</p>	<p><b>22. Remarks</b> Briefly describe important aspects of the outbreak not covered above (e.g., restaurant closure, immunoglobulin administration, economic impact, etc)</p> <p>_____</p>

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

**6. Was implicated food item provided to the school through the National School Lunch/Breakfast Program?**

- Yes
- No
- Unknown or Undetermined

**If Yes, Was the implicated food item donated/purchased by :**

- USDA through the Commodity Distribution Program
- Purchased commercially by the state/school authority
- Other \_\_\_\_\_
- Unknown or Undetermined

**Part 4: Ground Beef**

1. What percentage of ill persons (for whom information is available) ate ground beef raw or undercooked? \_\_\_\_\_%
  2. Was ground beef case ready? (Ground beef that comes from a manufacturer packaged for sale and not altered or repackaged by the retailer)
    - Yes
    - No
    - Unknown or Undetermined
  3. Was the beef ground or reground by the retailer?
    - Yes
    - No
    - Unknown or Undetermined
- If yes, was anything added to the beef during grinding (e.g., shop trim or any product to alter the fat content) \_\_\_\_\_

**Part 5: Mode of Transmission**

(Enterohemorrhagic *E. coli* or *Salmonella* Enteritidis only)

1. **Mode of Transmission** (for greater than 50% of cases)  
*Select one:*
  - Food
  - Person to person
  - Swimming or recreational water
  - Drinking water
  - Contact with animals or their environment
  - Unknown or Undetermined

**Part 6: Additional Egg Questions**

1. **Were Eggs:** (Check all that apply)
  - in-shell, un-pasteurized?
  - in-shell, pasteurized?
  - liquid or dry egg product?
  - stored with inadequate refrigeration during or after sale?
  - consumed raw?
  - consumed undercooked?
  - pooled?
2. **If eggs traced back to farm, was *Salmonella* Enteritidis found on the farm?**
  - Yes
  - No
  - Unknown or Undetermined

Comment: \_\_\_\_\_

### **Contamination Factors:<sup>1</sup>**

- 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  $\Rightarrow$  leads to contamination of vehicle (e.g., cutting boards)
- C14 - Storage in contaminated environment  $\Rightarrow$  leads to contamination of vehicle (e.g., store room, refrigerator)
- C15 - Other source of contamination (*please describe in Comments*)

### **Proliferation/Amplification Factors:<sup>1</sup>**

- 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:<sup>1</sup>**

- 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:<sup>2</sup>**

- 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, eclairs)
- 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

<sup>1</sup> 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.

<sup>2</sup> 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.