

## Section VI, Chapter G: Food and Waterborne Disease Surveillance and Investigation

### Objective

The objective of the Food and Waterborne Disease Surveillance and Investigation Program is to perform surveillance for the detection of food and waterborne diseases, to investigate food and waterborne disease outbreaks, and to educate staff about methods and procedures used in outbreak investigations. In addition, the staff of the program component provides an understanding of the etiology of the pathogens that cause the disease outbreaks. The Department of Health (DOH) is committed to providing the public and other health care professionals and interested parties information regarding food and waterborne diseases, outbreaks, and their prevention.

### Narrative Description

- a. Dynamic and the continual changing patterns of individual and global economic behavior have complicated the public health control of food and waterborne diseases and have accentuated the need for an improved public health infrastructure to detect illness. This has been recognized in Florida and was one of the considerations that led to the creation and maintenance of eight regional food and waterborne illness epidemiologists in the Division of Disease Control and Health Protection, Bureau of Epidemiology. The duties of the Regional Environmental Epidemiologists (REE) is to assist county health departments in the surveillance, investigation and reporting of food and waterborne disease outbreaks.
- b. DOH continues its ongoing responsibility and authority for epidemiological investigation in public food establishments as well as its own facilities. DOH retains regulatory jurisdiction over food service establishments in institutions (schools, assisted living facilities, detention facilities and adult day cares), civic and fraternal organizations, bars and lounges that don't prepare foods, and theaters that limit their food service to items customarily served at theaters. Department of Business and Professional Regulation (DBPR) regulates restaurants, most mobile food vehicles, caterers and most public food service events. The Florida Department of Agriculture and Consumer Services (FDACS) regulates grocery stores, convenience stores, bakeries and food processors. Legislative changes in 2010 moved food service facilities in hospitals, nursing homes, child care facilities, many group homes, churches and other not-for-profit religious organizations to other agencies which includes the Agency for Health Care Administration, Agency for Persons with Disabilities and the Department of Children and Families.
- c. The Food and Waterborne Disease Program is charged with developing and maintaining a regional and statewide food and waterborne disease complaint reporting system. This enables an enhanced degree of surveillance, early detection of disease outbreaks and investigation. Food and waterborne disease outbreaks are historically underreported so this continued resource and effort is needed to achieve better reporting at an earlier date in the outbreak process.
- d. Florida has a unique structure in place for food and waterborne disease surveillance and investigation with eight regional food and waterborne illness epidemiologists to assist the

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CHDs in the investigation of disease outbreaks. This program is designed to address tasks at the county, regional, and state levels. The county health departments maintain food and waterborne illness complaint logs and perform outbreak investigations with an epidemiological team composed of an environmental health professional, a nurse, and an epidemiologist. In addition to the knowledge and experience the REE bring to the program, they provide both training and technical assistance in outbreak investigations. The REE assist with report writing, questionnaire development, and statistical analysis.

**Authority**

- a. Section 381.006 (10), FS, Addresses the environmental epidemiology function of DOH, including the investigation of food and waterborne disease.
- b. Subsection 509.032 (2) (d) and 509.035 (1) (a), FS. The first section addresses the adoption of rules by DBPR providing the standards and requirements for “cooperating and coordinating with DOH in epidemiological investigations.” The second section addresses the coordination between DBPR and DOH on closures of establishments due to a public health threat.
- c. Rules 64D-3.029, 64D-3.040 (4), (6), (8) & 64D-3.041, FAC. Rule 64D-3.029 is known as the reportable diseases and conditions rule and lists those diseases that are reportable in Florida, many of which are food and waterborne. The list also includes reporting of food and waterborne disease outbreaks as well as individually confirmed cases of illness. Subsections 64D-3.040 (4) and (6) address the exclusion of food workers in certain situations and subsection 64D-3.040 (8) refers to the posting of warnings regarding raw oyster consumption in restaurants. Rule 64D-3.041 addresses epidemiological investigations.
- d. Interagency Agreement between the Department of Business and Professional Regulation and the Department of Health. This agreement clarifies the duties and responsibilities of DOH and DBPR with regard to conducting epidemiological investigations in public food service establishments licensed by DBPR.
- e. Memorandum of Understanding between the Florida Department of Agriculture and Consumer Services (FDACS) and the Department of Health. This agreement clarifies the duties and responsibilities of DOH and FDACS with regard to conducting epidemiological investigations in establishments regulated by FDACS.

**Standards and Reporting Requirements**

- a. Each county health department will maintain a log of food and waterborne disease complaints. This log can be a hard copy or computerized (the REE can help with setting up a computer file on request). The log will be reviewed on at least a weekly basis by health department staff for surveillance purposes (to detect outbreaks).
- b. Each county health department will have a written procedure describing the handling of food and waterborne disease complaints (when and which staff will be used to investigate the incident). Complaints should be collected utilizing the Tri-Agency

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Complaint form and routinely shared between local environmental health and epidemiology staff.

- c. Each county health department will forward complaint information within 24 hours of receipt to the agency of jurisdiction (FDACS, DBPR, DEP, DCF, AHCA, and APD) via fax, e-mail or phone, without identifying information to protect patient confidentiality. All complaints should be sent to the REE for entry into the centralized tracking system.
- d. Each county health department will have an epi team to investigate food and waterborne disease outbreaks and significant or unusual single food and waterborne disease complaints as described in this section.
- e. At the end of each food or waterborne disease outbreak, a final report will be written and sent within 30 days of the end of the investigation to the REE. The statewide coordinator and REE will review, edit for accuracy in concert with the CHD lead investigator, and send final reports to the state and federal agencies of concern.
- f. When assistance is needed (whether it is for information, training, or technical assistance) during a food or waterborne disease outbreak investigation, the county health department will call their REE or, if they are not available, the statewide coordinator.
- g. The REE will be responsible for completing the CDC form 52.12 and 52.13 with oversight and final approval by the statewide coordinator.

## Procedures

**Planning** – Planning makes all the difference in the smooth operation of a food and waterborne disease outbreak investigation.

- a. Designate the county health department epidemiological investigation team. It should consist of one nursing professional, one epidemiologist (if available) and one environmental health professional.
- b. Designate which forms are being used by the county health department and which computer programs are being used for epidemiological analysis (e.g., EpiInfo). A list of forms for use in food and waterborne outbreak investigations is on the bureau webpage.
- c. Establish a log for documenting complaints and reports of foodborne illnesses and provide access to both environmental health and epidemiology staff for surveillance and outbreak detection. Establish when an investigation needs to be made, and establish how and when each foodborne epidemiologist team member will be notified once it is determined that an outbreak has occurred.
- d. Establish who will take the lead in an outbreak investigation.

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- e. Determine who will be the media contact (this could be the lead person, but also could be someone else, depending on the county health department policy for media contacts).
- f. Determine how, when, and who will contact the REE when it is decided that an outbreak is suspected.
- g. Establish specific duties for each team member to address in outbreak situations:
  - i. onsite visits;
  - ii. lab samples – clinical, food, and water;
  - iii. study design/questionnaire development;
  - iv. collecting case histories;
  - v. organization of data; and
  - vi. analyzing data.
- h. Determine who notifies involved agencies (e.g., DBPR, FDACS, and DEP) and when.
- i. Designate who is responsible for writing the report and supplying the REE with the information to complete CDC Form 52.12 or 52.13. All information should be sent to the REE.
- j. Determine who will receive copies of the written final reports.
- k. Establish and maintain a foodborne outbreak investigation kit in a strategic location. Each county health department should have a centrally located, readily accessible kit assembled with appropriate materials and equipment for investigating food and waterborne illness outbreaks. These kits should be prepared in advance and maintained in ready-to-use condition. Glass jars and sampling implements will be kept sterile. It is recommended that an inventory be conducted at least twice a year, preferably quarterly. Missing materials are to be replaced and existing equipment will be re-sterilized every six months. A smaller kit should also be prepared with a sampling of necessary equipment and issued to an individual assigned to on-call duty. When performing sample collections, use sterile technique, complete laboratory forms and sampling logs. When necessary complete chain-of-custody forms. Subsequent litigation is possible and custody of records is important. Please contact your Regional Environmental Epidemiologist or, if unavailable, the Food and Waterborne Disease Program Coordinator at (850) 245-4116 for technical assistance and training (see Appendix A for kit list).
- l. Write a food and waterborne disease protocol (see template in Appendix B).
  - i. Follow procedures for investigating food and waterborne disease outbreaks and complaints as taught in DOH training: How to Investigate

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Foodborne Illness Outbreaks and How to Investigate Waterborne Disease Outbreaks (see checklist and sample questionnaires in Appendix C-E). One questionnaire is in EpiInfo format. Investigation information is available on the bureau's webpage. At the county health department's request, your REE is available to present training to both large and small county health department groups on any of these subjects.

- ii. Send summary reports to the REE along with the information to complete the CDC Form 52.12 or 52.13. The Regional Environmental Epidemiologist will assist with writing and editing of the report for accuracy and will forward revised copies to the Food & Waterborne Disease Program Coordinator. The Coordinator will review the reports for completeness and accuracy and forward the finalized report on to all agencies with jurisdiction over the outbreak source.

**Communications** – During any food or waterborne disease outbreak or complaint investigation, prompt communications are of the utmost importance.

- a. Even if the county health department does not require assistance from the REE, make sure they are notified within 24 hours in the event of a food or waterborne disease outbreak or unusual complaint. During non-business hours notification should be made through the 24/7/365 hotline operated by the Bureau of Epidemiology (850-245-4401).
- b. Make sure that your supervisors and county health department officer, Environmental Health Chief and Nursing Director are kept aware of all developments in a food or waterborne disease outbreak investigation as they occur. This can be done via email, face-to-face briefings, or conference calls.
- c. Make sure that your REE is also kept informed regarding outbreak information. Your REE will ensure that the Food and Waterborne Disease Coordinator in the Bureau of Epidemiology is kept informed.
- d. The Food and Waterborne Disease Coordinator will serve as liaison with DOH administrators and other state and federal agencies.

**Special Investigations and Situations**

- a. **Vibriosis** When there is consumption of oysters or clams, the following actions should be taken:
  - i. The Food and Waterborne Disease Coordinator or designee will function as interagency liaison and will provide all information from this investigation to the Division of Aquaculture at FDACS.
  - ii. As soon as you become aware of a case of vibriosis with shellfish consumption, call or email your Regional Environmental Epidemiologist. If your Regional Environmental Epidemiologist is not available, call the Food and Waterborne Disease Coordinator at the Bureau of Epidemiology in Tallahassee at (850) 245-4116.

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- iii. With the collaboration of the agency of jurisdiction, the CHD epidemiology team should immediately begin to obtain information regarding location of oyster or clam purchase and consumption and copies of tags for the implicated oysters or clams. As soon as tag copies are obtained, fax or email copies to your Regional Environmental Epidemiologist. Where invoices and receipts are available, those should also be collected.
- iv. Observe oyster/clam storage temperatures and oyster/clam handling processes where possible.
- v. Ensure that the case is entered into Merlin and complete the Seafood Investigation section in Merlin. Attach a copy of the tags/invoices and environmental assessment detail to the case documents in Merlin.
- vi. Other cases of vibriosis that are related to seafood consumption (such as scallops, crabs, finfish, etc.) should still be investigated and the Seafood Investigation section in Merlin should still be completed. However, collection of tags and assessment of temperatures and handling process are not necessary, unless cases are part of an outbreak. If outbreak related, follow outbreak investigation protocols.

**b. Exclusions of Ill Food Workers from Work**

- i. Consult Rule 64D-3.040, FAC, regarding exclusions for enteric pathogens.
- ii. Consult Rule 64D-3.040, FAC, for Typhoid fever infections.

**c. Multi-state/national food and waterborne disease outbreak investigations**

- i. The Food and Waterborne Disease Coordinator will serve as liaison with other state agencies, other states, and federal agencies.
- ii. The CHD will proceed as usual with the outbreak investigation.
- iii. Lead CHD investigators may be requested to participate in national conference calls to share the most up-to-date information regarding investigation results.
- iv. Use Council for the Improvement of Foodborne Outbreak Response (CIFOR) guidelines as a reference tool during multi-state outbreak investigations. Hard copies of the CIFOR guidelines were distributed to the CHDs and are available online at:
  - a. <http://www.cifor.us/documents/CIFORGuidelinesforFoodborneDiseaseOutbreakResponse-updated.pdf>

**d. Botulism**

- i. Any cases of suspected foodborne botulism will be referred immediately to the Merlin case reviewer for foodborne botulism in the Bureau of

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Epidemiology for differential diagnosis and confirmation. The Bureau of Epidemiology will ensure physician to physician consultation with a CDC expert by contacting the CDC Emergency Operation Center.

- ii. The CHD will coordinate the investigation of any cases of foodborne botulism.
- e. Single cases of neurotoxic shellfish poisoning, paralytic shell fish poisoning, pufferfish poisoning, ciguatera, scombroid poisoning, mushroom poisoning, chemical poisoning or other unusual food or waterborne illness**
- i. These are to be fully investigated as though they were a food or waterborne disease outbreak.
- f. Legionella cases and outbreaks**
- i. Follow the Guidelines for Surveillance Investigation and Control of Legionnaire's Disease in Florida: <http://www.floridahealth.gov/diseases-and-conditions/legionnaires-disease/documents/gsi-legionella-update-final.pdf>
- g. Primary Amebic Meningoencephalitis (PAM)**
- i. Call your Regional Environmental Epidemiologist immediately to notify them of suspected or confirmed PAM cases. Use the information found at this website for risk communication: <http://www.floridahealth.gov/diseases-and-conditions/food-and-waterborne-disease/waterborne-links.html>
  - ii. Use this form for case reporting: <http://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/documents/crf-amebic-meningo.pdf>
- h. Harmful Algal Blooms (HABs)**
- i. Single cases of human illness potentially associated with a harmful algal bloom should be fully investigated. Investigations will be coordinated by the toxicology group and the Food and Waterborne Disease Program.
- i. Epi Aids**
- i. With the eight REE and the many well-trained CHD staff, there will not be much occasion to request an Epi Aid (see definition of Epi Aid in (2) below).
  - ii. An Epi Aid is an investigator with the CDC (usually a CDC EIS Officer) who is sent into the state to take over the outbreak investigation. Requests for an Epi Aid must come from the CHD through the Food and Waterborne Disease Coordinator. CDC cannot send anyone into the State of Florida to investigate unless they are specifically invited to do so by the State Epidemiologist.

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- iii. If there is an unusual situation (e.g., emerging pathogen about which there is little information, unusual source/vehicle, multi-state involvement) in a food and waterborne disease outbreak and the CHD, along with the Food and Waterborne Disease Coordinator, decide that additional assistance is needed, the CHD may request an Epi Aid. This request must be discussed with the Food and Waterborne Disease Coordinator who will then discuss the appropriateness of the request with the Chief of the Bureau of Epidemiology who will get the approval of the State Epidemiologist. Only after the State Epidemiologist has approved the EpiAid, will the Food and Waterborne Disease Coordinator contact the Centers for Disease Control and Prevention (CDC).

**j. Forms Used** (a complete list is available on the bureau's webpage)

- i. CDC 52.13 – Investigation of a Foodborne Outbreak
- ii. CDC 52.12 – Waterborne Diseases Outbreak Report
- iii. Food and Waterborne Outbreak Summary Report Form
- iv. DH 4073 – Product Complaint Incident Form
- v. DH 4045 – Stop Sale Notice
- vi. CDC 52.79 – Cholera and Other Vibrio Illness Surveillance Report
- vii. CDC 50.34 – Laboratory Examinations Requested
- viii. DH 1847 – DOH Laboratory Request Form
- ix. E. coli Case History Report
- x. Cyclosporiasis Case Report Form
- xi. Record of Ciguatera Intoxication
- xii. CDC 53.1 – Viral Hepatitis Case Record
- xiii. Primary Amebic Meningoencephalitis Case Report Form
- xiv. Cryptosporidium Risk Factor Questions

**k. Relationship to Other Department of Health Units**

- i. The CHDs will strive to maintain complete food and waterborne disease complaint logs and monthly outbreak investigation data. Monthly outbreak data will be provided to the designated Regional Environmental Epidemiologist by the 15 of the following month. The Regional Environmental Epidemiologists and the Bureau of Epidemiology will



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provide information, training, and technical assistance to the CHDs on request. The Bureau of Epidemiology will also provide information and coordinate related activities with all other programs within the Bureau of Epidemiology and the Bureau of Environmental Health, as well as the Division of Disease Control and Health Protection.

**Relationship to other Agencies**

- l.** Department of Business and Professional Regulation – regulation of
  - i. Restaurants, caterers, mobile food carts and some temporary events.
  
- m.** Florida Department of Agriculture and Consumer Services
  - i. Division of Food Safety – regulation of retail markets, delis in markets, food processors, and fast food establishments associated with gas stations.
  - ii. Division of Aquaculture – regulation of the molluscan shellfish program (oysters, clams, mussels, scallops (whole or with roe on)).
  
- n.** Department of Environmental Protection – regulation of municipal water systems and wastewater.
  
- o.** The Department of Children and Families responsibilities – Prior to
  - 1. licensing/opening a group care establishment that depends on a water
  - 2. supply regulated by Chapter 64E-8, FAC, and/or wastewater system
  - 3. regulated by Chapter 64E-6, FAC, approval is required from the CHD
  - 4. for the following: verify that the permit has been issued for the drinking water well and/or onsite sewage wastewater treatment and disposal system.
  
- p.** The Agency for Persons with Disabilities responsibilities - Prior to
  - 1. licensing/opening a group care establishment that depends on a water
  - 2. supply regulated by Chapter 64E-8, FAC, and/or wastewater system
  - 3. regulated by Chapter 64E-6, FAC, approval is required from the CHD
  - 4. for the following: verify that the permit has been issued for the drinking water well and/or onsite sewage wastewater treatment and disposal system.
  
- q.** The Agency for Health Care Administration (AHCA) responsibilities –
  - 1. based on changes to oversight of foodservice operations for hospitals

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2. and nursing homes emphasis will be placed on coordination of approvals
  3. prior to licensure for these facilities, prior to licensing/opening a
  4. hospital/nursing home establishment that depends on a water supply
  5. regulated by Chapter 64E-8, FAC, and/or wastewater system
  6. regulated by Chapter 64E-6, FAC, approval is required from the CHD
  7. for the following: verify that the permit has been issued for the drinking water well and/or onsite sewage wastewater treatment and disposal system.
- r. Food and Drug Administration – regulation of foods other than meat and poultry and recalls.
- s. United States Department of Agriculture – regulation of meat, poultry and egg products and recalls of meat and poultry.
- t. Centers for Disease Control and Prevention – technical assistance, disease etiology and investigation, multi-state/nationwide food and waterborne disease outbreak coordination.
- u. Environmental Protection Agency – federal drinking water and wastewater regulations and regulation of pesticides.
- v. Useful Publications**
- i. *Control of Communicable Diseases Manual*, 20th Edition, 2015  
David L. Heymann, MD, Editor  
American Public Health Association  
800 I Street, NW  
Washington, D.C. 20001-3710
  - ii. *Procedures to Investigate Foodborne Illness*, 5th Edition, 1999  
Prepared by the Committee on Communicable Diseases Affecting Man, Food Subcommittee  
International Association for Food Protection  
6200 Aurora Avenue, Suite 200W  
Des Moines, IA 50322-2863, USA
  - iii. *Procedures to Investigate Waterborne Illness*, 2nd Edition, 1996  
Prepared by the Committee on Communicable Diseases Affecting Man, Food Subcommittee  
International Association of Milk, Food and Environmental Sanitarians, Inc. (IAMFES)  
P.O. Box 701  
Ames, IA 50010
  - iv. “Foodborne Illness Acquired in the United States-Major Pathogens”  
Elaine Scallan, et al.

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Emerging Infectious Diseases, January, 2011  
[http://wwwnc.cdc.gov/eid/article/17/1/p1-1101\\_article](http://wwwnc.cdc.gov/eid/article/17/1/p1-1101_article)

- v. *Diseases Transmitted by Foods: A Classification and Summary*, 2nd Edition, 1982 (may be out of print)  
Frank L. Bryan, Ph.D., M.P.H.  
HHS Publication No. (CDC) 83-8237  
U.S. Centers for Disease Control and Prevention  
U.S. Department of Commerce  
Springfield, VA 22161  
National Technical Information Service
- vi. *Guidelines for Foodborne Outbreak Disease Response*, Second Edition  
2014 Council to Improve Foodborne Outbreak Response  
<http://www.cifor.us/CIFORGuidelinesProjectMore.cfm>
- vii. Attribution of Foodborne Illnesses, Hospitalizations, and Deaths to Food Commodities by using Outbreak Data, United States, 1998-2008  
John A Painter, et al.  
Emerging Infectious Diseases, March 2013  
[https://wwwnc.cdc.gov/eid/article/19/3/11-1866\\_article](https://wwwnc.cdc.gov/eid/article/19/3/11-1866_article)

**w. Websites**

- i. DOH Food and Waterborne Disease Program website:  
<http://www.floridahealth.gov/diseases-and-conditions/food-and-waterborne-disease/index.html>
- ii. Florida Integrated Food Safety Center of Excellence:  
<http://foodsafetyflorida.org/>
- iii. *Foodborne Pathogenic Microorganisms and Natural Toxins Handbook 2012 - The "Bad Bug Book"*: includes fact sheets and links on many food and waterborne pathogens  
<http://www.fda.gov/Food/FoodborneIllnessContaminants/CausesOfIllnessBadBugBook/ucm2006773.htm>
- iv. Recalls:
  - FDA - <http://www.fda.gov/Safety/Recalls/EnforcementReports/default.htm>
  - FSIS - [http://www.fsis.usda.gov/FSIS\\_Recalls/index.asp](http://www.fsis.usda.gov/FSIS_Recalls/index.asp)
- v. Gateway to Government Food Safety Information  
<http://www.foodsafety.gov/>
- vi. USDA Food Safety and Inspection Service Homepage  
<http://www.fsis.usda.gov/>
- vii. FDA Consumer Advice <http://www.fda.gov/ForConsumers/default.htm>

- viii. FDA Seafood Consumer Advice:  
<http://www.fda.gov/Food/ResourcesForYou/Consumers/ucm077331.htm>
- ix. FDA Mercury in Fish and Shellfish:  
<http://www.fda.gov/Food/ResourcesForYou/Consumers/ucm110591.htm>
- x. CDC: Food and waterborne and other diseases - fact sheets  
<http://www.cdc.gov/DiseasesConditions/>  
<http://www.cdc.gov/foodsafety/>
- xi. CDC: Foodborne infections – general information  
<http://www.cdc.gov/foodsafety/foodborne-germs.html>
- xii. CDC: A-Z Index for Foodborne Illness  
<http://www.cdc.gov/foodsafety/diseases/>

**APPENDIX A****FOOD AND WATERBORNE ILLNESS INVESTIGATION EQUIPMENT**

Each county health department shall have a centrally located, readily accessible kit assembled with appropriate materials and equipment for investigating food and waterborne illness outbreaks. These kits should be prepared in advance and maintained in ready-to-use condition. Glass jars and sampling implements shall be kept sterile. It is recommended that an inventory be conducted at least twice a year, preferably quarterly. Missing materials are to be replaced and existing equipment should be reesterilized. A smaller kit should also be prepared with a sampling of necessary equipment and be issued to an individual assigned to "on-call" duty. When performing sample collections, use sterile technique, complete identification and chain-of-evidence procedures. Subsequent litigation is possible and this will be important. Please contact your Regional Environmental Epidemiologist at for technical assistance and training.

**A. EQUIPMENT RESOURCES**

1. Curtin-Matheson Scientific, Inc. (407) 859-8281.
2. Forestry Suppliers, Inc.:
  - a. for a catalog: (800) 360-7788
  - b. for orders: (800) 647-5368.
3. Barnant Temperature Products (800) 637-3739.
4. Nasco Sampling Products (800) 558-9595.
5. Capital Office Supply (800) 552-1340.
6. Office Depot, WalMart, K-Mart.

**B. REFERENCES** (copies should be kept in the kit):

1. Procedures to Investigate Foodborne Illness, 5th Edition, 1999, International Association of Milk, Food and Environmental Sanitarians, Inc.
2. Procedures to Investigate Waterborne Illness, 2nd Edition, 1996, International Association of Milk, Food and Environmental Sanitarians, Inc.
3. Control of Communicable Diseases Manual, 20th Edition, 2014, David L. Heymann, MD, Editor, American Public Health Association
4. Council to Improve Foodborne Outbreak Response (CIFOR). Guidelines for Foodborne Disease Outbreak Response 2nd Edition, 2014, Council of State and Territorial Epidemiologists

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**C. TRANSPORTING EQUIPMENT:**

1. One large, hard plastic cooler, 36-40 quart capacity.
2. One or two small coolers (hard plastic preferred).
3. Ten or more refreezable ice packs (blue ice).
4. Portable hard plastic file boxes for forms.

**D. SAMPLING CONTAINERS (FOOD):**

1. Whirlpac Sterile Bags, 1 or 2 boxes (500 bags per box)
  - a. 18 oz. write on (NASCO #B1065wa).
  - b. 24 oz. write on (NASCO #B1195wa).
  - c. 55 oz. write on (NASCO #B1195wa).
  - d. Larger sealed bags (12" x 16"): Lab Source, (800) 545-8823; Smith Container (407) 851-8310; Office and Scientific Equipment (703) 305-5537.
2. One case 1/2 quart WIDE mouth mason jars (wrap and autoclave).
3. One case 1 quart WIDE mouth mason jars (wrap and autoclave).
4. Aluminum foil, heavy meat paper and resealable plastic bags.

**E. SAMPLING CONTAINERS (CLINICAL):**

1. Stool containers for enterics. It is recommended that 25 to 50 be available. Be sure that the transport media for enterics is fresh (the usual media is bright pink when it is fresh).
2. Stool containers for parasites. There is no transport media in parasite containers.

**F. SAMPLING UTENSILS:**

1. 4 knives, 2 serrated and 2 straight edged
2. 2 spatulas
3. 4-6 large spoons
4. 2-3 scoops

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5. 3-4 tongs
6. 2-3 ladles
7. 5 large forks
8. 2 sets scissors

**G. SAMPLING SUPPORT MATERIALS:**

1. Tape, adhesive and masking.
2. Labels and tags.
3. Wax pencils, markers. Lab pens for writing on wet or frozen packs are available from PGC Scientific Corp, (800) 424-3300.
4. Alcohol swabs or 1-2 bottles of 95% ethyl alcohol.

**H. LABORATORY FORMS:**

1. Product complaint incident form HRS-H 4073, Nov. 87, stock # 5744-000-4073-4
2. Enteric pathogens HRS 932, Sep. 89
3. Investigation of a Foodborne Outbreak, CDC 52.13, Rev. 9/89
4. Waterborne Diseases Outbreak Report, CDC 52.12, Rev. 2/91

Note: During the investigation, use IAMFES investigation forms or contact your regional Biological Scientist for assistance.

**I. INVESTIGATION/HAZARD ANALYSIS EQUIPMENT:**

Note: Thermocouples, pH meters, and potentiometers are ideal, but are not absolutely necessary, since these analyses can be conducted at the laboratory after the samples have been collected.

1. Thermometers; 2-3 metal stem (bayonet), 0-220 F.
2. Test strips: chlorine, quaternary ammonia, iodine.
3. pH tester, potentiometer (redox).
4. Thermocouple(s), needle end.

**APPENDIX B.****Sample Format of Food and Waterborne Illness Investigation Policies and Procedures**

- I. **Purpose:** To establish a uniform procedure for administering the food and waterborne illness surveillance and investigation program.
- II. **Scope:** The procedure applies to all Environmental Health/Nursing/Epidemiology staff. The county health department food and waterborne illness investigation team investigates food and waterborne illnesses to verify diagnosis, to investigate appropriate preventive/control measures, and to prevent recurrence of similar episodes.

**III. References**

1. Ss. 509.032 (2) (d) and 509.035 (1) (a), F.S.
2. S. 381.006 (10), F.S.
3. Rule 64D-3.029 & 64D-3.040 (4), (6), (8) & 64D-3.041, F.A.C.
4. Interagency Agreement Between The Department of Business and Professional Regulation and The Department of Health – This agreement clarifies the duties and responsibilities of the Department of Health (DOH) and the Department of Business and Professional Regulation (DBPR) with regard to conducting epidemiological investigations in public food service establishments licensed by DBPR. If a copy of this document is needed, please contact your Regional Environmental Epidemiologist.
5. Interagency Agreement Between The Florida Department of Agriculture and Consumer Services (FDACS) and the Department of Health – This agreement clarifies the duties and responsibilities of the Department of Health (DOH) and the FDACS with regard to conducting epidemiological investigations in public food service establishments licensed by FDACS. If a copy of this document is needed, please contact your Regional Environmental Epidemiologist.
6. Control of Communicable Diseases Manual, 20th Edition, 2014  
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Washington, D.C. 20001-3710
7. Procedures to Investigate Foodborne Illness, 5th Edition, 1999  
Prepared by the Committee on Communicable Diseases Affecting Man, Food Subcommittee  
International Association For Food Protection  
6200 Aurora Avenue, Suite 200W  
Des Moines, IA 50322-2863, USA
8. Procedures to Investigate Waterborne Illness, 2nd Edition, 1996  
Prepared by the Committee on Communicable Diseases Affecting Man, Food Subcommittee  
International Association of Milk, Food and Environmental Sanitarians, Inc. (IAMFES)  
P.O. Box 701  
Ames, IA 50010



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9. Guidelines for Foodborne Outbreak Disease Response, 2014  
Council to Improve Foodborne Outbreak Response  
<http://www.cifor.us/ciforguidelinesprojectmore.cfm>

#### IV. Definitions

1. Foodborne illness outbreak - An outbreak is an incident in which two or more persons have the same disease, have similar symptoms, or excrete the same pathogens; and there is a time, place, and/or person association between these persons. A foodborne disease outbreak is one in which a common food has been ingested by such persons. Nevertheless, a single case of suspected botulism, mushroom poisoning, ciguatera or paralytic shellfish poisoning, other rare disease, or a case of a disease that can be definitely related to ingestion of a food, can be considered an incident of foodborne illness and warrants further investigation.
2. Waterborne illness outbreak - An outbreak is an incident in which two or more persons have the same disease, have similar clinical features, or have the same pathogen, and there is a time, place, or person association among these persons. A waterborne outbreak is traceable to ingestion of contaminated water or ice or contact with contaminated water. A single case of a disease, however, is considered an incident of waterborne illness if there is evidence that the ill person ingested or contacted contaminated water. As such, the situation warrants further investigation. Waterborne methemoglobinemia in an infant who resides in a rural area having a high concentration of nitrates in well water is an example of a single case of waterborne illness due to ingestion. Primary amebic meningoencephalitis in a person who swam in a farm pond is an example of a single incident related to water contact.

#### V. Responsibilities

Primary responsibilities for this program rests with the designated food and waterborne illness surveillance and investigation team consisting of a staff member each from Environmental Health, Nursing, and Epidemiology.

#### VI. CHD Protocol

Continue with written CHD protocol. Your regional food and waterborne disease epidemiologist can be asked for assistance at any time during a food or waterborne disease complaint or outbreak investigation.

**APPENDIX C - Part 1 – FOODBORNE ILLNESS ENVIRONMENTAL HEALTH ASSESSMENT REPORT**

**Florida Department of Health  
Foodborne Illness  
Environmental Health Assessment Report**



**Facility Information**

Establishment Name:		Log #: _____
Address:	City/Zip:	Type of Facility
Date Complaint Received:		<input type="checkbox"/> Restaurant/Caterer
Date of Suspected Meal:		<input type="checkbox"/> Grocery
Investigator(s):	Date(s) Investigated:	<input type="checkbox"/> Healthcare
Implicated/Suspected Pathogen:	Number of Persons ill:	<input type="checkbox"/> Daycare/School
Implicated/Suspected Food(s):		<input type="checkbox"/> Detention
Quantity of Suspected Food Sold/Served:		<input type="checkbox"/> Private Home
Were any similar complaints received? If yes, collect information if available.		<input type="checkbox"/> Other: _____
Were any food employees ill in the two weeks prior to the suspected event?		<input type="checkbox"/> YES <input type="checkbox"/> NO
Did any food employee(s) become ill in the two weeks after the suspect event?		<input type="checkbox"/> YES <input type="checkbox"/> NO
Does the facility have a sick leave policy?		<input type="checkbox"/> YES <input type="checkbox"/> NO
Were any clinical specimens collected from food workers?		<input type="checkbox"/> YES <input type="checkbox"/> NO
Were any food/water samples taken?		<input type="checkbox"/> YES <input type="checkbox"/> NO
Does the facility routinely track and document temperatures or have a HACCP program?		<input type="checkbox"/> YES <input type="checkbox"/> NO
Does the facility have a bare-hand contact with ready to eat (RTE) food policy?		<input type="checkbox"/> YES <input type="checkbox"/> NO
Does the facility have a glove-hand contact with ready to eat (RTE) food policy?		<input type="checkbox"/> YES <input type="checkbox"/> NO

**Environmental Health Assessment Checklist**

- If raw oysters are involved, obtain tag(s) from suspect lot(s). If possible, collect 10-12 oysters from suspect lot(s) and contact your regional foodborne disease epidemiologist
- Obtain a copy of the menu of the foods served including daily specials that may not be on the menu
- Obtain a list of food employees with contact numbers
- Obtain food employee work schedules
- Determine food employee duties
- Exclude/restrict ill food employees
- Observe general food preparation practices
- Interview food employees about food preparation practices
- Develop a flow chart or food flow diagram for the implicated food item or ingredient to capture detailed information about each step in the food handling process
- Interview food employees for evidence of illness
- Interview ill food employees to determine common exposures
- Initiate and document corrective actions
- Identify the source of suspect foods
- Obtain the suppliers' receipts/invoices for the suspect foods
- Collect leftover food samples and send to state lab for testing, if available. Obtain original packaging, if possible

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- Conduct a trace back of suspect foods, if warranted
- Summarize and determine contributing factors (see below)
- Recommend actions to prevent future outbreaks

Hazard	Related Contributing Factors to Investigate During Field Visit
Spore-Formers and Preformed Toxins (i.e. <i>C. perfringens</i> , <i>B cereus</i> , Staph)	Cooling, Re-Heating, Hot Holding, Hand Contact, Room Temp Storage, Cold Holding, Time/Temperature Abuse
Viral Infections (i.e. Norovirus)	Ill Food Worker, Hand Contact, Handwashing, Contaminated Raw Product, Ready to Eat (RTE) Foods
Bacterial Infections	Ill Food Worker, Hand Contact, Handwashing, Contaminated Raw Product, Cross Contamination, Cooking, Cooling, Hot Holding, Re-Heating, Time/Temp. Abuse
Parasitic Infections	Ill Food Worker, Hand Contact, Cross Contamination, Contaminated Raw Product, Contaminated Source

**Environmental Observations - On-site Investigation**

	Y (Yes)	N (No)	N/A (Not Applicable)	N/O (Not Observed)
1. Inadequate/Improper hand washing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Food employees have visible cuts, burns, or infected sores on hands/arms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. <i>Bare-hand</i> contact by a food worker who is suspected to be infectious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. <i>Glove-hand</i> contact by a food worker who is suspected to be infectious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Food or water not from approved sources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Inadequate protection of suspected food(s)/Improper food storage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Insufficient cold holding time/temperature(s) of suspected food(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Prolonged cold storage (more than 7 days) of suspected food(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Improper thawing of suspected food(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Insufficient cooking time/temperature(s) of suspected food(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Insufficient cooling time/temperature(s) of suspected food(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Insufficient reheating time/temperature(s) of suspected food(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Insufficient hot holding time/temperature(s) of suspected food(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Major equipment malfunctions or facility operations failures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Calibrated food thermometer not available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Cross-contamination of RTE foods with raw ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Cross-contamination of ingredients – Workers/Equipment/Utensils/Cloths	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Improper cleaning and sanitization of equipment/utensils/food contact surfaces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Poisonous substance accidentally/inadvertently or intentionally/deliberately added	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Toxic container - Container that held suspected food(s) is made of toxic substances	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Addition of excessive quantities of ingredients that are toxic in large amounts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Inadequate modified atmosphere packaging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Inadequate processing (acidification, water activity, fermentation)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Insufficient/Improper use of chemical processes designed for pathogen destruction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Person in charge not assigned, knowledgeable, or performing duties/responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Food employees not knowledgeable about food safety or employee health reporting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Consumer advisory requirements not posted, if applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Explanations For Items Marked “Yes”/Comments and Any Other Relevant Observations**


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**Assessment of Implicated/Suspect Food (Required)** Describe the food flow for the implicated food item(s) or ingredient(s) to capture detailed information about each step in the food handling process, including who prepared what and when. Note size of containers, labels, and descriptive information on product(s). Complete a separate assessment of each implicated/suspected food, if applicable.

Food Source: Date Received: _____ Brand name: _____ Product name: _____ Manufacturer: _____	Supplier/Distributor: _____ Size and package type: _____ Product code(s): _____ Expiration Date: _____
Condition Received:  • Temperature(s):	
Storage:  • Temperature(s):	
Preparation:  • Temperature(s):	
Cooking:  • Temperature(s):	

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Cooling:

- Time/Temperature(s):

Reheating:

- Temperature(s):

Holding:

- Time/Temperature(s):

Assembling/Plating (including garnishing):

- Temperature(s):

Service:

- Temperature(s):

**APPENDIX C - PART 2 – FOODBORNE ILLNESS EPIDEMIOLOGICAL INVESTIGATION CHECKLIST****DOCUMENT A RESPONSE TO EACH ITEM LISTED**

**Note:** This is only one part of a foodborne outbreak investigation. Other elements include the environmental investigation. Please refer to the Foodborne Illness Environmental Health Assessment Report, Foodborne Illness Investigation: Food Worker Interview, and Foodborne Illness Investigation: Food Preparation Review Worksheet (Appendix C - Part 1, Part 3, and Part 4).

- Maintain foodborne illness log to identify potential outbreaks from individual reports.
- Determine if report warrants further Epi investigation. Gather additional information to confirm details of incident. Get complete menu and identify other potentially exposed groups (i.e., other people in party, guests, list of attendees), phone numbers, household exposure(s). Determine if there are any leftover food items.
- Obtain any medical information from primary M.D., emergency room/hospital records, lab. Document the number hospitalized and the number who sought medical care. Were clinical specimens collected and tested? If not, obtain the appropriate specimen for suspect etiologic agent (stool, vomitus, blood), if possible.
- Develop and administer questionnaire. Interview both sick and well individuals (including employees). Appendix D and E are examples of foodborne outbreak questionnaires. Appendix D is in EpiInfo format and Appendix E is a modified document from CDC.
- Document dates and times of illness onset and exposures, illness duration and location(s) of illness occurrence.
- Form preliminary hypothesis of etiologic agent, source and means of transmission.
- Decide on methodology (study design), cohort or case-control study.
- Determine definition of illness (or case definition if case-control study), based on symptoms, incubation, duration, exposure and/or lab.
- Determine number of persons in study, the number of ill persons (or number of cases if case-control study).
- List symptoms and frequency of symptoms.
- Plot an epidemic curve.
- Provide a food specific attack rate table (if cohort study).
- Provide 2 X 2 contingency table(s), pertinent measures of association and statistics.
- Finalize hypothesis of etiologic agent, source and means of transmission.
- Document how potential confounding factors were controlled and provide preventive measures.

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- Write report (introduction/background, methodology, results, conclusion, and recommendations). Include appropriate CDC form.

**APPENDIX C - Part 3 – FOODBORNE ILLNESS INVESTIGATION: FOOD WORKER INTERVIEW**

**Foodborne Illness Investigation: Food Worker Interview**

The Florida Department of Health is investigating an outbreak of gastrointestinal illness among persons who had food prepared by the \_\_\_\_\_. We are interviewing all food workers who helped prepare/serve the food. We understand that some people did not become ill, but it is important that we talk with everyone in order to determine what caused the illness. The questionnaire will take about 5-10 minutes to complete. All information shall remain strictly confidential.

Date of Interview: \_\_\_\_/\_\_\_\_/\_\_\_\_

Food worker name: \_\_\_\_\_ Position: \_\_\_\_\_

Address: \_\_\_\_\_ Phone: \_\_\_\_\_

**Work History:**

• How long have you worked at this establishment? \_\_\_\_\_ Years \_\_\_\_\_ Months \_\_\_\_\_ Days

• Do you work as a food worker anywhere else?  Yes  No

– **If Yes**, where? \_\_\_\_\_

Time period of concern: (usually 10 days prior to suspect meal)

• When did you work during this time period? (Indicate hours worked)

Sun_____	Mon_____	Tues_____	Wed_____	Thurs_____	Fri_____	Sat_____
Sun_____	Mon_____	Tues_____	Wed_____	Thurs_____	Fri_____	Sat_____
Sun_____	Mon_____	Tues_____	Wed_____	Thurs_____	Fri_____	Sat_____

**Illness History:**

• Did you have any of the following symptoms during this time period? (Check all that apply)  Yes  No

- |   |                                      |   |                                |
|---|--------------------------------------|---|--------------------------------|
| <input type="checkbox"/> Nausea                           | <input type="checkbox"/> Vomiting    | <input type="checkbox"/> Abdominal cramps | <input type="checkbox"/> Fever |
| <input type="checkbox"/> Chills                           | <input type="checkbox"/> Muscle ache | <input type="checkbox"/> Headache         |                                |
| <input type="checkbox"/> Diarrhea: # of episodes/day_____ |                                      |   |                                |

If any of the above symptoms experienced:

- When did the symptoms begin? Date and time: \_\_\_\_/\_\_\_\_/\_\_\_\_ \_\_\_\_:\_\_\_\_ AM/PM
- When did the symptoms end? Date and time: \_\_\_\_/\_\_\_\_/\_\_\_\_ \_\_\_\_:\_\_\_\_ AM/PM
- Did you see a doctor or go to the hospital?  Yes  No
- **If Yes**, who was your healthcare provider? \_\_\_\_\_
- Diagnosis?\_\_\_\_\_
- When did you return to work after being ill? \_\_\_\_\_

• Has anyone in your household been ill during this same time period?  Yes  No

– **If Yes**, which symptoms did the person experience?

- |   |                                      |   |                                |
|---|--------------------------------------|---|--------------------------------|
| <input type="checkbox"/> Nausea                           | <input type="checkbox"/> Vomiting    | <input type="checkbox"/> Abdominal cramps | <input type="checkbox"/> Fever |
| <input type="checkbox"/> Chills                           | <input type="checkbox"/> Muscle ache | <input type="checkbox"/> Headache         |                                |
| <input type="checkbox"/> Diarrhea: # of episodes/day_____ |                                      |   |                                |

If any of the above symptoms experienced by household member:

- When did the symptoms begin? Date and time: \_\_\_\_/\_\_\_\_/\_\_\_\_ \_\_\_\_:\_\_\_\_ AM/PM
- When did the symptoms end? Date and time: \_\_\_\_/\_\_\_\_/\_\_\_\_ \_\_\_\_:\_\_\_\_ AM/PM
- What is the occupation of the ill household member?\_\_\_\_\_

• Do you know of anyone else (co-workers, friends, etc.) with a similar illness during the same time period?

Yes  No

If yes, who? \_\_\_\_\_ Telephone: \_\_\_\_\_



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- Did you eat any foods prepared on the date of the suspected meal(s)?  Yes  No  
If yes, indicate foods eaten: \_\_\_\_\_

- What foods do you prepare/serve? \_\_\_\_\_
- 

If the employee prepared/served any of the suspected foods, complete the Food Preparation Review Worksheet.

**APPENDIX C - Part 4 – FOODBORNE ILLNESS INVESTIGATION: FOOD PREPARATION REVIEW WORKSHEET**

**Food Preparation Review Worksheet – To be completed with all food workers that handled/prepared suspected food(s)**

Food Item	Date/Time Prepared	Role/Task Performed	Quantity	Temp	Equipment Used	Depth of Container or Food Thickness	Contact with Food	Worker's Name	Worker's Health Prior to Prep	Sanitation or Unusual Events or Other Information
E.g. Salad	6/28/2010 11 a.m.	Rinsed Vegetables. Chopped lettuce head. Cut up tomatoes and cucumbers added to salad.	4 qt.	None taken	Knife, cutting board, stainless steel mixing bowl	4 Qt. stainless steel mixing bowl	<input type="checkbox"/> Glove <input checked="" type="checkbox"/> Bare-Hand <input type="checkbox"/> N/A	Nora	<input checked="" type="checkbox"/> Ill Onset: 6/27/2010 Duration: 48 hours <input type="checkbox"/> Well	Nora was ill with GI symptoms. She did not properly wash her hands after using the toilet. She used bare hands to cut up lettuce and vegetables for the salad.
							<input type="checkbox"/> Glove <input type="checkbox"/> Bare-Hand <input type="checkbox"/> N/A		<input type="checkbox"/> Ill Onset: Duration: <input type="checkbox"/> Well	
							<input type="checkbox"/> Glove <input type="checkbox"/> Bare-Hand <input type="checkbox"/> N/A		<input type="checkbox"/> Ill Onset: Duration: <input type="checkbox"/> Well	
							<input type="checkbox"/> Glove <input type="checkbox"/> Bare-Hand <input type="checkbox"/> N/A		<input type="checkbox"/> Ill Onset: Duration: <input type="checkbox"/> Well	
							<input type="checkbox"/> Glove <input type="checkbox"/> Bare-Hand <input type="checkbox"/> N/A		<input type="checkbox"/> Ill Onset: Duration: <input type="checkbox"/> Well	
							<input type="checkbox"/> Glove <input type="checkbox"/> Bare-Hand <input type="checkbox"/> N/A		<input type="checkbox"/> Ill Onset: Duration: <input type="checkbox"/> Well	
							<input type="checkbox"/> Glove <input type="checkbox"/> Bare-Hand <input type="checkbox"/> N/A		<input type="checkbox"/> Ill Onset: Duration: <input type="checkbox"/> Well	
							<input type="checkbox"/> Glove <input type="checkbox"/> Bare-Hand <input type="checkbox"/> N/A		<input type="checkbox"/> Ill Onset: Duration: <input type="checkbox"/> Well	



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## APPENDIX D

DEPARTMENT OF HEALTH  
GASTROENTERITIS QUESTIONNAIRE

Hello, my name is \_\_\_\_\_, with the Department of Health. We were notified that several people who ate at the \_\_\_\_\_ on \_\_\_\_\_ (date), developed symptoms of gastroenteritis. The county health department would like your assistance in investigating this illness, which may or may not be associated with this establishment. We would appreciate a few minutes of your time to ask you a few questions EVEN IF YOU HAVE NOT BEEN ILL. All responses shall be kept confidential.

{Name} <A \_\_\_\_\_ >Age ## DOB <mm/dd/yy>Sex <A>  
Address <A \_\_\_\_\_ >City <A \_\_\_\_\_ >State <A>Zip #####  
Phone <long distance> Occupation <A \_\_\_\_\_ >

Date of Meal {Expoday} <mm/dd> Time Foods Eaten {Expohour} #####

Were you {ill}? <Y> Treated at {hospital}? <Y> {Hospital} {name} <A \_\_\_\_\_ >

Did you see a {Physician}? <Y> {Physname} <A \_\_\_\_\_ >{Physphone}<phonenum>  
{Diagnosis} <A \_\_\_\_\_ >Laboratory {specimen} <Y>{Specimen} {type}<A \_\_\_\_\_ >

Date of onset {Onsetday} <mm/dd> Time of onset {Onsethour} #####

{Incub}ation{1} ##.# (in hours)  
{Incub}ation{2} ##.# (in days)

How many hours did your illness last? {Duration} ##.# {Pres}ently {ill}? <Y>

What were your symptoms? IT IS IMPORTANT THAT YOU ANSWER FOR EACH SYMPTOM.

Nausea <Y>

Vomiting <Y>

Fever <Y> (highest temp. <A \_\_\_\_\_ >F)

Stomach Cramps/pain <Y>

Diarrhea <Y> (3 or more loose stools in one day)

Blood in stool <Y>

Muscle aches <Y>

Headache <Y>

Cough <Y>

Chills <Y>

Other Symptom <A \_\_\_\_\_ >

Have you or anyone you know been similarly ill in the prior week? <Y>

If yes, date <mm/dd> name <A \_\_\_\_\_ >

Food List: IT IS IMPORTANT THAT YOU ANSWER FOR EACH FOOD ITEM

List Foods <Y>

Other <A \_\_\_\_\_ >

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Did you attend any other function in common with any of the attendees prior to the luncheon?  
<Y> If yes, list: <A

Do you know anyone who was ill after eating this meal? <Y>  
If yes, name <A > tel: <phonenum><A >

Comments <A >  
Thank-you for your participation. Date of Interview <mm/dd/yy> Interviewer <A >

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## APPENDIX E

## Foodborne Outbreak Questionnaire

Interviewer's Name: \_\_\_\_\_  
 Interviewer's work phone: \_\_\_\_\_  
 ID Number \_\_\_\_\_

## Section A: Introduction

Hello. My name is \_\_\_\_\_. I am working with the Department of Health, investigating a possible outbreak of gastrointestinal illness in persons who ate at the \_\_\_\_\_ on \_\_\_\_\_ (date). We understand that some people did not become ill after eating, but it is important that we talk with everyone who ate a meal in order to determine what caused the illness. The questionnaire will take about 5 minutes. All information shall remain strictly confidential. Is now a good time to complete the questionnaire?

(If no, when would be a more convenient time to call back?) Date \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
 Time \_\_\_\_\_ AM / PM  
 Phone \_\_\_\_\_

## Section B: General Information

Attendee's name: \_\_\_\_\_ DOB: \_\_\_/\_\_\_/\_\_\_ Age: \_\_\_\_\_  
 Parent's name (if child): \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Occupation: \_\_\_\_\_

## Section C: Consumer Information

Did you eat at the (name of establishment) on \_\_\_\_\_?  
 (fill out date of meal)

(circle one) Y N DK

At what time of day did you begin eating? \_\_\_\_\_ AM / PM

Had you been ill with gastrointestinal symptoms, such as nausea, vomiting, abdominal cramps or diarrhea any time in the seven days before eating at (name of establishment)?

(circle one) Y N DK

Did you develop gastrointestinal symptoms, such as nausea, vomiting, abdominal cramps or diarrhea, after eating at (name of establishment) on (date of meal).

(circle one) Y N DK (If no, skip to Section E)

## Section D: Clinical Information

When did you first become ill? \_\_\_\_\_ (day of week) Date: \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
 Onset time? \_\_\_\_\_ AM / PM

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Did you have any of the following symptoms: (circle one for each symptom)

Nausea	Y	N	DK
Vomiting	Y	N	DK
Abdominal cramps	Y	N	DK
Chills	Y	N	DK
Muscle aches	Y	N	DK
Headache	Y	N	DK
Fever	Y	N	DK
<i>(If yes, was temperature recorded?)</i>	Y	N	DK
<i>(If yes, highest recorded temperature _____ □)</i>			
Diarrhea (defined as $\geq 3$ loose stools in a 24 hour period)	Y	N	DK
<i>(If yes, what is the most number of stools in a 24-hour period?) _____</i>			
Bloody diarrhea	Y	N	DK
Other symptoms not mentioned above? _____			
Did you see a physician?	Y	N	DK
Was a stool culture or other clinical specimens collected?	Y	N	DK
Results: _____			
Were you hospitalized overnight?	Y	N	DK
<i>(If yes, how many days?) _____</i>			
Are you recovered now?	Y	N	DK
Date: ____/____/____ Time symptoms ended:____AM/PM			
Were you on any antibiotics during the week before your illness?	Y	N	DK
Do you have a chronic medical condition, such as diabetes, lung disease, cancer?	Y	N	DK
<i>(If yes, please describe) _____</i>			
_____			
Have you received any antibiotics as treatment for this illness?	Y	N	DK
Did anyone in your household become ill after you?	Y	N	DK
<i>(If yes, how many people?) _____ List below:</i>			
Person #1: Age ____ Day of illness onset _____ Time ____ AM / PM			
Person #2: Age ____ Day of illness onset _____ Time ____ AM / PM			
Person #3: Age ____ Day of illness onset _____ Time ____ AM / PM			

**Section E: Menu Items**

I am now going to ask you about foods you may have eaten. If you ate a particular food item, please answer 'Yes' to that question. Also answer 'Yes' even if you just had one bite of a particular food item (for example, if you tasted something off a companion's plate). If you can't remember, please answer 'Don't know'.

Did you eat any of the following foods?

List All Foods:

_____	Y	N	DK
_____	Y	N	DK
_____	Y	N	DK

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Did you eat any of the following condiments?

List All Condiments:

_____	Y	N	DK
_____	Y	N	DK
_____	Y	N	DK

Did you eat any of the following desserts?

List All Desserts:

_____	Y	N	DK
_____	Y	N	DK
_____	Y	N	DK

Did you drink any of the following beverages?

List All Beverages:

_____	Y	N	DK
_____	Y	N	DK
_____	Y	N	DK

Did you take any food items home?

*(If yes, do you have any left that we can collect?*

*(If yes, give instructions to hold refrigerated, without eating, and make arrangements to collect.)*

Y	N	DK
Y	N	DK

Did you eat any other food item(s) not mentioned above? *(If yes, please list):*

\_\_\_\_\_  
\_\_\_\_\_

**Section F: Food Preparation**

Were you part of the team that organized and prepared the meal?

*(If no, skip to Section G)*

Y	N	DK
---	---	----

What day did the food arrive? \_\_\_\_\_ *(day of week)* Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

What time of day? \_\_\_\_\_ AM / PM

How was the food stored?

Placed in refrigerator \_\_\_\_\_

Stored unrefrigerated \_\_\_\_\_

Other \_\_\_\_\_

Did you eat any of the food before service?

*(If yes, on what day):*

The day before service Time: \_\_\_\_\_ AM / PM

The day served Time: \_\_\_\_\_ AM / PM

Other \_\_\_\_\_

Y	N	DK
---	---	----



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Did you help set up the eating area for self-service?	Y	N	DK
<i>If yes, was a dedicated serving spoon or knife provided for each item?)</i>			
Meat item	Y	N	DK
Side salad item (potato, pasta, vegetable)	Y	N	DK
Condiment (mustards, pickles, dips)	Y	N	DK
Dessert item	Y	N	DK

**Section G: Conclusion**

Thank you for taking the time to answer this questionnaire. We hope to discover the cause of illness soon. However, we may need to contact you again at a later date. If you have any questions about this outbreak, please contact \_\_\_\_\_ at phone number (\_\_\_\_)\_\_\_\_\_. Again, thank you for your participation.