

VI. Chapter G: FOOD AND WATERBORNE DISEASE SURVEILLANCE AND INVESTIGATION**A. 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 CHD 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 primary pathogens that cause the disease outbreaks. The 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.

B. Narrative Description

1. Changing patterns of individual and global economic behavior have complicated the public health control of food and waterborne diseases in recent years 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 of a Statewide Food and Waterborne Disease Coordinator (Statewide Coordinator) and nine regional environmental epidemiologists in the Division of Environmental Health, Bureau of Community Environmental Health. The job of the regional environmental epidemiologists is to assist CHDs in the investigation of disease outbreaks.
2. 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 public food service establishments in institutions such as hospitals, schools, nursing homes, prisons, adult congregate living facilities, day care, etc. The responsibility for routine, regulatory inspections of all other public food establishments was transferred from DOH to the Department of Business and Professional Regulation (DBPR) and to the Department of Agriculture and Consumer Services (DOACS) through 1992 legislation. With regard to regulation of water systems, DOH is responsible for non-public water systems such as private wells, and the Department of Environmental Protection is responsible for municipal water systems.
3. The development of an inclusive reporting system was a major concern as the degree of reporting equated to the degree of surveillance and investigation. Food and waterborne disease outbreaks have always been very underreported so an effort was needed to achieve better reporting at an earlier date in the outbreak process.
4. Florida has a unique structure in place for food and waterborne disease surveillance and investigation with nine regional environmental epidemiologists to assist the CHDs in the investigation of disease outbreaks. This program is designed to address tasks at the county, regional, and state levels. The counties

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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 regional environmental epidemiologists bring to the program, they provide both training and technical assistance in outbreak investigations. The regional environmental epidemiologists assist with report writing, questionnaire development, and statistical analysis.

C. Authority

1. S. 381.006(10), F.S. Addresses the environmental epidemiology function of DOH, including the investigation of food and waterborne disease.
2. Ss. 509.032(2)d and 509.035(1)a, F.S. 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.
3. Ss. 3.002(1) & 64D-3.013(3), (5), (7) & 64D-3.014, F.A.C.). This rule is known as the reportable diseases 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. The rule also addresses the exclusion of foodworkers in certain situations and the posting of warnings regarding raw oyster consumption in restaurants.
4. Interagency Agreement Between the Department of Business and Professional Regulation and the Department of Health and Rehabilitative Services (Appendix J). 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.

D. Standards and Reporting Requirements

1. Each CHD shall maintain a log of food and waterborne disease complaints. This log can be a hard copy or computerized (the regional environmental epidemiologist 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).
2. Each CHD will have a written procedure describing the handling of food and waterborne disease complaints (when they will be investigated).
3. Each CHD will forward complaint information within 24 hours of receipt to the agency of jurisdiction (DOACS, DBPR, or DEP) via fax, e-mail or phone, without identifying information to protect patient confidentiality.

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4. Each CHD will have an epidemiological team to investigate food and waterborne disease outbreaks and significant or unusual single food and waterborne disease complaints as described in this section.
5. 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 regional environmental epidemiologist. The Statewide Coordinator will review and send reports to the state and federal agencies of concern.
6. When assistance is required (whether it is for information, training, or technical assistance) during a food or waterborne disease outbreak investigation, the CHD will call their regional environmental epidemiologist or, if they are not available, the Statewide Coordinator.

E. Procedures

1. **Planning** – Planning makes all the difference in the smooth operation of a food and waterborne disease outbreak investigation.
 - a. Designate the CHD epidemiological investigation team. It must consist of one nursing professional, one epidemiologist (if available) and one environmental health professional.
 - b. Designate which forms are being used by the CHD and which computer programs are being used for epidemiological analysis (e.g., EpiInfo).
 - c. Establish a log for documenting complaints and reports of foodborne illnesses. Establish when an investigation needs to be made, and establish how and when each foodborne epidemiologist team member shall be notified once it is determined that an outbreak has occurred.
 - d. Establish who shall take the lead in an outbreak investigation.
 - e. Determine who shall be the media contact (this could be the lead person, but also could be someone else, depending on the CHD policy for media contacts).
 - f. Determine how, when, and who shall contact the regional environmental epidemiologist when it is decided that an outbreak is suspected.
 - g. Establish specific duties for each team member to address in outbreak situations:
 - (1) onsite visits;
 - (2) lab samples – clinical, food, and water;

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- (3)** study design/questionnaire development;
 - (4)** collecting case histories;
 - (5)** organization of data; and
 - (6)** analyzing data.
- h.** Determine who notifies involved agencies (e.g., DBPR, DOACS, and DEP) and when.
- i.** Designate who is responsible for writing the report and completing CDC Form 52.12 or 52.13 and sending it to the regional environmental epidemiologist.
- j.** Determine who shall receive copies of the written reports.
- k.** Establish and maintain a foodborne outbreak investigation kit in a strategic location. Each CHD 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 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 shall be resterilized. 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 techniques, complete identification and chain-of-evidence procedures. Subsequent litigation is possible and custody of records is important. Please contact your regional environmental epidemiologist or, if unavailable, the Statewide Coordinator for technical assistance and training (see Appendix A for kit list).
- l.** Write a food and waterborne disease protocol (see template in Appendix B).
 - (1)** Follow procedures for investigating food and waterborne disease outbreaks and complaints as taught in DOH training: How to Investigate 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. Both training modules are available on the DOH Bureau of Environmental Epidemiology Website's Food and Waterborne Disease Interactive Bookshelf. At the CHD's request, your regional environmental epidemiologist is available to present training to both large and small groups on any of these subjects.
 - (2)** Send summary reports to the regional environmental epidemiologist along with a copy of CDC Form 52.12 or 52.13. The regional environmental epidemiologist shall forward copies to

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the Statewide Coordinator. The Statewide Coordinator shall review the reports for completeness and accuracy and forward them on to all state agencies with jurisdiction over the outbreak source, as well as to the Centers for Disease Control and Prevention.

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

a. Even if the CHD does not require assistance from the regional environmental epidemiologist, make sure they are notified in the event of a food or waterborne disease outbreak or unusual complaint.

b. Make sure that your supervisors and CHD Director, Environmental Health Director 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 regional environmental epidemiologist is also kept informed regarding outbreak information. Your regional environmental epidemiologist shall ensure that the Statewide Coordinator is kept informed.

d. The Statewide Coordinator shall serve as liaison with DOH administrators and other state and federal agencies.

3. Special Investigations and Situations

a. *Vibrio vulnificus* (from shellfish consumption):

(1) The Statewide Coordinator shall function as interagency liaison and shall provide all information from this investigation to the Molluscan Shellfish Program in the Division of Aquaculture at DOACS.

(2) As soon as you become aware of a case of *Vibrio vulnificus*, immediately call your regional environmental epidemiologist. If your regional environmental epidemiologist is not available, call the Statewide Coordinator.

(3) With the collaboration of the agency of jurisdiction, the CHD epidemiology team should immediately begin to obtain information regarding location of oyster purchase and consumption and remaining tags. As soon as tags are obtained, fax copies to your regional environmental epidemiologist.

(4) Ascertain if any oysters from the same lot are still available. If so, obtain a dozen and ship them to the Bureau of Laboratories in Jacksonville. Consult with your regional environmental epidemiologist regarding packing and labeling.

b. Exclusions of Ill Food Workers from Work

- (1) Consult ss. 64D-3.013(3), F.A.C., regarding Salmonella and Shigella infections.
- (2) Consult ss. 64D-3.013(5), F.A.C., for Typhoid fever infections.
- (3) Consult ss. 64D-3.014, F.A.C., for other enteric illnesses in sensitive situations.

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

- (1) The Statewide Coordinator shall serve as liaison with other state agencies, other states, and federal agencies.
- (2) The CHD shall proceed as usual with the outbreak investigation.
- (3) Lead CHD investigators may be requested to participate in national conference calls to share the most up-to-date information regarding investigation results.

d. Vibrio parahaemolyticus

- (1) The Statewide Coordinator shall function as interagency liaison and shall provide all information from this investigation to the Molluscan Shellfish Program in the Division of Aquaculture at DOACS.
- (2) Each case of *Vibrio parahaemolyticus* due to consumption of molluscan shellfish (oysters, clams, mussels, and scallops) is to be investigated in the same manner as *Vibrio vulnificus* cases. The Federal Food and Drug Administration (FDA) is tracking these cases and shellfish sources.

e. Botulism

- (1) Any cases of suspected botulism shall be referred immediately to the State Epidemiologist in the Bureau of Epidemiology for confirmation.
- (2) The CHD shall coordinate the investigation of any cases of foodborne botulism.

f. Single cases of neurotoxic shellfish poisoning, ciguatera, mushroom poisoning, chemical poisoning or other unusual food or waterborne illness

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These are to be fully investigated as though they were a food or waterborne disease outbreak.

g. Epi Aids

- (1) An Epi Aid is an investigation by an Epidemic Investigation Service (EIS) Officer with the Centers for Disease Control and Prevention who is sent into the state to take over the outbreak investigation. Requests for an Epi Aid must come from the CHD through the Statewide Coordinator. CDC cannot send anyone into the state of Florida to investigate unless they are specifically invited to do so.
- (2) With the nine regional environmental epidemiologists and the many well-trained CHD staff, there shall not be much occasion to request an Epi Aid (see definition of Epi Aid in #3 below).
- (3) 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 Statewide Coordinator, decide that additional assistance is needed, the CHD may request an Epi Aid. This request must be discussed with the Statewide Coordinator who shall then contact the Centers for Disease Control (CDC).

F. Forms Used:

1. CDC 52.13 – Investigation of a Foodborne Outbreak
2. CDC 52.12 – Waterborne Diseases Outbreak Report
3. Food and Waterborne Outbreak Summary Report Form
4. HRS-H 4073 – Product Complaint Incident Form
5. DH 4045 – Stop Sale Notice
6. CDC 52.79 – Cholera and Other Vibrio Illness Surveillance Report
7. CDC 50.34 – Laboratory Examinations Requested
8. DH 1847 – DOH Laboratory Request Form
9. E. coli Case History Report
10. Cyclosporiasis Case Report Form

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11. Record of Ciguatera Intoxication
12. CDC 53.1 – Viral Hepatitis Case Record

G. Relationship to Other Department of Health Units

The CHDs shall strive to maintain complete food and waterborne disease complaint logs and monthly outbreak investigation data. Monthly outbreak data shall be provided to the designated regional environmental epidemiologist by the 15th of the following month. The regional environmental epidemiologists and the Bureau of Community Environmental Health shall provide information, training, and technical assistance to the CHDs on request. The Bureau of Community Environmental Health shall also provide information and coordinate related activities with all other Division of Environmental Health Bureaus (Onsite Sewage Treatment and Disposal Systems, Water, and Radiation Control), as well as the Bureau of Epidemiology in the Division of Disease Control, and any other appropriate DOH divisions/bureaus.

H. Relationship to other Agencies

1. Department of Business and Professional Regulation – regulation of restaurants, caterers, mobile food carts and some temporary events.
2. Department of Agriculture and Consumer Services:
 - a. Division of Food Safety – regulation of retail markets, delis in markets, food processors, and fast food establishments associated with gas stations.
 - b. Division of Aquaculture – regulation of the molluscan shellfish program (oysters, clams, mussels, scallops (whole or with roe on)).
3. Department of Environmental Protection – regulation of municipal water systems and wastewater.
4. Federal Food and Drug Administration – regulation and recall of foods other than meat and poultry and recalls.
5. United States Department of Agriculture – regulation and recall of meat and poultry.
6. Centers for Disease Control and Prevention – technical assistance, disease etiology and investigation, multi-state/nationwide food and waterborne disease outbreak coordination.
7. Environmental Protection Agency – federal drinking water and wastewater regulations and regulation of pesticides.

I. Useful Publications

1. Control of Communicable Diseases Manual, 17th Edition, 2000
James Chin, MD, MPH, Editor
American Public Health Association
800 I Street, NW
Washington, D.C. 20001-3710
2. 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
3. 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
4. Food-Related Illness and Death in the United States
Paul S. Mead, et al.
Emerging Infectious Diseases, September – October, 1999, 5(5):607-625
<http://www.cdc.gov/ncidod/eid/vol5no5/mead.htm>
5. 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

J. Websites

1. Florida Department of Health - Food and Waterborne Disease
Surveillance/Investigation

[http://dohiws.doh.state.fl.us/Divisions/environmental_health/hsee/surveil.h
tm](http://dohiws.doh.state.fl.us/Divisions/environmental_health/hsee/surveil.htm)
2. Foodborne Pathogenic Microorganisms and Natural Toxins 1992 - The
“Bad Bug Book”: includes fact sheets and links on many food and
waterborne pathogens <http://vm.cfsan.fda.gov/~mow/intro.html>
3. Recalls:

- FDA Enforcement Reports-
<http://www.fda.gov/opacom/Enforce.html>
FDA recalls – <http://www.fda.gov/opacom/7alerts.html>
FSIS - http://www.fsis.usda.gov/Fsis_Recalls/index.asp
4. Gateway to Government Food Safety Information
<http://www.foodsafety.gov/>
 5. USDA Food Safety and Inspection Service Homepage
<http://www.fsis.usda.gov/>
 6. FDA Consumer Advice:
<http://vm.cfsan.fda.gov/~lrd/advice.html>
 7. FDA Seafood Consumer Advice:
<http://vm.cfsan.fda.gov/~lrd/sea-adv.html>
 8. FDA Seafood Information:
<http://vm.cfsan.fda.gov/seafood1.html>
 9. CDC: Food and waterborne and other diseases - fact sheets
<http://www.cdc.gov/health/diseases.htm>
Also available from the CDC Fax Information Service: Call (404) 332-4565 and follow instructions
 10. CDC: Foodborne infections – general information
http://www.cdc.gov/ncidod/dbmd/diseaseinfo/foodborneinfections_g.htm
 11. CDC: Foodborne and Diarrheal Diseases homepage
<http://www.cdc.gov/ncidod/dbmd/foodborne/index.htm>