BOH Forms: #24a Foodborne Illness Guide

Board of Health and Local Health Department Standard Operating Procedures (SOP)

This ***Checklist*** highlights many of the requirements during outbreaks for regulated Massachusetts Food Establishments. The checklist is designed to be used in tandem with the ***MA Food Code. Remember: BOH always has the final say on requirements.***

❒ Board of Health (BOH) Food Safety

The Board of Health is responsible for ensuring safe food regardless of whether food service operation is licensed or not. This includes surveillance and investigation of potential foodborne illness (FBI). BOH should work with their Public Health Nurse (PHN).

❒ Licensed Food Establishments (FE): any operation offering food directly to the consumer, **EXCEPT*** the following.

Note: If open to the public but unlicensed, prominently post a Consumer Disclosure:

"Not regulated or inspected by the Board of Health."

- Venues offering only commercially packaged non-TCS foods like chips and coffee/tea (shelf stable cream only).
- Farm Stands/Markets/Residential Kitchens with only uncut fruits and vegetables, eggs held at 45F, raw honey, maple syrup.
- Non-Commercial Community Potlucks or Block Parties.
- Residential Kitchens for non-profit events (Bake Sales, Soup Kitchens).
- Residential Kitchens for Family Daycares and B & Bs with 6 bedrooms or less serving only breakfast.
- Private Events (Note: caterers must be licensed in their home community.).
- Cooking Classes, Non-Commercial Church Socials, Class Parties (may need permission from school),
- Home Delivery Service for Take Out Food and Groceries. Assumes food is packaged and delivered in a timely manner.

❒ Foodborne Illness (FBI)

Bacteria, Viruses, Parasites, Toxins are common FBI pathogens. More than 200 foodborne diseases have been identified. These are the most common.

- ☐ **Botulism**
- ☐ **Brucellosis**
- ☐ **Campylobacter**
- ☐ **Cholera**
- ☐ **Cryptosporidiosis**
- ☐ **Cyclospora**
- ☐ **Giardia**
- ☐ **Hepatitis A**
- ☐ **Listeria (Listeriosis)**
- ☐ **Noroviruses (Norwalk-like Viruses)**
- ☐ **Salmonella**
- ☐ **Shiga Toxin Producing Escherichia coli**
- ☐ **Shigella**
- ☐ **Vibrio parahaemolyticus**

❒ BOH FBI Reporting & Response – even 1 suspected case is reportable to DPH in MAVEN. Call if Outbreak suspected

❒ **Complaint reported by the Consumer**
❒ **Suspected or confirmed case reported on MAVEN**
❒ **Reported by a Provider. Lab or DPH by phone or email**

- ☐ Confirm FBI with EPI on duty **(617) 983-6800**
- ☐ Advice on FBI investigation and containment with DPH Food Protection Program **617) 983-6712**
- ☐ State Public Health Lab 617-983-6201
- ☐ **24/7 Laboratory Telephone: 617-590-6390**
- ☐ Coordinate response with your Public Health Nurse (PHN)
- ☐ Coordinate with other BOH who may have cases or share impacted Food Establishments

❒ FBI Investigation [Foodborne illness investigations | Mass.gov]

1. Investigate the complaint & confirm FBI is credible.
2. Designate a person in charge of the investigation.
3. Document everything.
4. Interview Complainant and people with FBI.
5. Report suspected cases to DPH as per protocols and post in MAVEN.
6. Review possible FBI, symptoms, incubation periods, transmission routes, etc.
7. Determine where the worker and family members work and follow up if needed.
    a. Food Establishment
    b. Daycare
    c. Assisted Living or Longterm Care
    d. Other Vulnerable Population facility
8. Determine if the FBI is likely associated with an operation serving food to the public and call them to provide situational awareness and to collect information.
9. Determine if FBI is likely the result of home practices, water contamination or other vectors and investigate further.
10. Conduct an inspection of any involved Food Establishments to determine food handling practices.
    a. Focus on handwashing, potential cross contamination sources, and RTE food handling practices.
    b. Note that contaminated food may still be on site and may have to be discarded.
11. Collect food samples if available that have been refrigerated less than a week.
12. Obtain stool or mucus samples if appropriate
    a. May order all food employees to submit stool samples and exclude them from work until tested.
    b. Number of required negative stool samples depends on the pathogen.
13. Develop a Case Definition
14. Collect Data on who, what, when, where, how, how much.
    a. Name, Age, Sex, Onset Date, Onset Time, Symptoms
15. Identify Cases and exclude them from food work based on the suspected or confirmed FBI protocols
16. Discuss FBI prevention protocols , policies, and practices with the Food Establishment Person in Charge (PIC)
17. Expand investigation as needed to contain the FBI outbreak
18. Conduct a final Food Establishment Inspection
19. Create an Outbreak Report summarizing the steps taken. data collected, and conclusions.
20. Close investigation and file documentation.
21. File all paperwork in MAVEN
22. Maintain surveillance and focus education on prevention.
23. Inform involved Food Establishments on conclusions made following the investigation and ensure the Food Establishments are properly informed with safe food handling practices

❒ Enhanced Facility Procedures Depending on the Suspected Cause

- ☐ Ensure the Establishment has an effective Illness Policy that includes staff informing their Supervisor if ill.
- ☐ Require the Illness Policy be in writing and distributed to all employees.
- ☐ Ensure any suspected or confirmed Cases do not handle food or are restricted from in-person work for the required isolation or quarantine period.
- ☐ Ensure that anyone who was ill or exposed has 2 negative tests before returning for work or has quarantined for the required infectious period.

❒ Handwashing

Restrooms:

- Hand wash signs to remind all of the proper steps to wash hands for 20 seconds to kill or remove pathogens.

Kitchen:

- **Wash your hands as soon as you arrive.**
- Wash your hands between tasks and tables and **before** serving any food.
- Wash your hands after clearing a table and **before** starting the next task.
- Wash your hands **before** and **after** eating or drinking.
- Drink from a closed container with a straw.

❒ FBI Protocols -

Norovirus: Nausea and vomiting are common symptoms of norovirus. Food employees who experience nausea and vomiting should be excluded from food handling duties unless it can be determined that their symptoms are from a non-infectious cause. Food employees who are diagnosed with norovirus must be excluded from food handling duties for either 72 hours past the resolution of symptoms or 72 hours past the date the specimen positive for norovirus was produced, whichever occurs last. Contacts of norovirus cases who are food employees and have diarrhea or vomiting shall be excluded from food handling duties for 72 hours past the resolution of symptoms. Again, laboratories in Massachusetts are aware that positive norovirus specimens must be sent to the State Public Health Laboratory for genotyping.

Shiga toxin-producing *E. coli*: Food employees diagnosed with Shiga toxin-producing *E. coli* must be excluded. They can be reinstated after diarrhea has resolved AND there is medical documentation of two consecutive negative stool specimens, taken 48 hours after antibiotic therapy has been completed, and taken 24 hours apart.

***S*. Typhi (Typhoid Fever):** Food employees with a diagnosis of Typhoid Fever must be excluded from the food establishment. They may only be reinstated with medical documentation of three consecutive negative stool specimens, starting one month after symptoms started, 48 hours after antibiotic therapy has been completed, and taken 48 hours apart.

***Shigella* spp.:** Food employees with a diagnosis of *Shigella* spp. must be excluded from the food establishment. They may be reinstated when symptoms have resolved AND there is medical documentation of two consecutive negative stool specimens, 48 hours after antibiotic therapy has been completed, and taken 24 hours apart.

Non-typhoidal *Salmonella*: Food employees with a diagnosis of non-typhoidal *Salmonella* must be excluded from the food establishment. They may be reinstated when symptoms have resolved AND there is medical documentation of two negative stool specimen, taken 48 hours after antibiotic therapy has been completed. In outbreak circumstances, two consecutive negative stool specimens are required, taken 24 hours apart.

Hepatitis A (HAV): Incubation can be as long as 50 days. Vaccinate or provide IG for exposed depending on age and vaccination status. Exclude until at least 1 week past symptom onset.

❒ Staff Health and Illness Policies and Training Plan

❒ None should come to work when ill with a contagious disease or take precautions when at work.
❒ Where possible, work from home protocols should be implemented.
❒ Staff should call immediately if not able to work a shift.
❒ Flexible leave and illness options should be available for those with a FBI in their household.
❒ Any suspected foodborne illness must be reported immediately to the Board of Health.
❒ Follow current Board of Health/DPH guidelines for exclusion

❒ Safer Handwashing

- Wet hands with warm running water.
- Lather with soap and scrub between fingers, on the back of your hands, fingertips and under nails.
- Wash for at least 20 seconds. The soap needs to be in contact with the virus for 20 seconds to kill any virus,
- Rinse well.
- Dry hands using a single-use paper towel.
- Use the paper towel or the back of your wrist to turn off the water.
- Wash your hands as soon as you arrive, between tasks, before and after eating and before you leave.
- *When in doubt, wash your hands*.

Common Foodborne Pathogens*

Pathogen	Common Name of Illness	Cause of Illness	Incubation Period	Symptoms	Possible sources	Steps for Prevention
Bacillus cereus	*B. cereus* food poisoning	large molecular weight protein (diarrheal type) or highly heat-stable toxin (emetic type)	30 minutes to 15 hours	Watery diarrhea, abdominal cramps, nausea, and vomiting (emetic type)	Meats, milk, vegetables, fish, rice, potatoes, pasta, and cheese	Proper holding temperatures
Campylobacter jejuni	Campylobacteriosis	Infection, even with low numbers	One to seven days	Nausea, fever, abdominal cramps, diarrhea, headache - varying in severity	Raw milk, eggs, poultry, raw beef, cake icing, water	Pasteurize milk; cook foods properly; prevent cross-contamination.
Clostridium botulinum	Botulism	Toxin produced by Clostridium botulinum	12 to 36 hours	Nausea, vomiting, diarrhea, fatigue, headache, dry mouth, double vision, muscle paralysis, respiratory failure	Low-acid canned foods, meats, sausage, fish	Properly can foods following recommended procedures; cook foods properly.
Clostridium perfringens	*Clostridium perfringens* food poisoning	Inadequate cooling, improper reheating, holding temperatures	8 to 22 hours	abdominal cramps and diarrhea, some include dehydration	Meats and gravies	Rapid cooling and reheating. Not holding product in temperature range allowing growth
Escherichia coli O157:H7	*E. coli* infection	Strain of enteropathic E. coli	Two to four days	Hemorrhagic colitis, possibly hemolytic uremic syndrome	Ground beef, raw milk	Thoroughly cook meat; no cross contamination.
Hepatitis A	Hepatitis	Hepatitis A Virus	2 to 4 weeks	fever, malaise, nausea, abdominal discomfort, yellow eyes, skin	Water, fruits, vegetables, iced drinks, shellfish, and salads	Proper hand washing before after using a restroom and before preparing food
Listeria monocytogenes	Listeriosis	Infection with Listeria monocytogenes	Two days to three weeks	Flu-like symptoms, meningitis, sepsticemia, miscarriage	Vegetables, milk, cheese, meat, deli meat, hot dogs, seafood	Purchase pasteurized dairy products; cook foods properly; no cross contamination use sanitary practices.

Norwalk, Norwalk-like, or Norovirus	Viral gastroenteritis, winter diarrhea, acute non-bacterial gastroenteritis, food poisoning, and food infection	Infection with Norwalk virus	Between 12 and 48 hours (avg 36 hours); duration, 12-60 hours	Nausea, vomiting, diarrhea and abdominal cramps, fever, headache	raw oysters/shellfish, water and ice, salads, frosting, person-to-person contact	Adequate and proper treatment and disposal of sewage, appropriate chlorination of water, restriction of infected food handlers from working with food until they no longer shed virus.
Salmonella	Salmonellosis	Infection with Salmonella species	12 to 24 hours	Nausea, diarrhea, abdominal pain, fever, headache, chills, prostration	Meat, poultry, egg or milk products	Cook thoroughly; avoid cross-contamination; use sanitary practices.
Staphylococcus aureus	Staphylococcal food poisoning	Toxin produced by certain strains of Staphylococcus aureus	One to six hours	Severe vomiting, diarrhea, abdominal cramping	Custard- or cream-filled baked goods, ham, poultry, dressing, gravy, eggs, potato salad, cream sauces, sandwich fillings	Refrigerate foods; use sanitary practices

*compiled from Iowa State University Extension Food Safety Project, FDA Bad Bug Book, and Foodborne Illness-Causing Organisms in the U.S. What You Need to Know

Foodborne Illnesses (Noninfectious)

Etiology	Incubation Period	Signs and Symptoms	Duration of Illness	Associated Foods	Laboratory Testing	Treatment
Antimony	5 min – 8 hrs. usually <1 hr	Vomiting, metallic taste.	Usually self-limited	Metallic container.	Identification of metal in beverage or food.	Supportive care.
Arsenic	Few hrs	Vomiting, colic, diarrhea.	Several days	Contaminated food.	Urine. May cause eosinophilia.	Gastric lavage, BAL (dimercaprol).
Cadmium	5 min – 8 hrs. usually <1 hr	Nausea, vomiting, myalgia, increase in salivation, stomach pain.	Usually self-limited	Seafood, oysters, clams, lobster, grains, peanuts.	Identification of metal in food.	Supportive care.
Ciguatera fish poisoning (ciguatera toxin)	2–6 hrs	GI: abdominal pain, nausea, vomiting, diarrhea.	Days to weeks to months	A variety of large reef fish. Grouper, red snapper, amberjack, and barracuda (most common).	Radioassay for toxin in fish or a consistent history.	Supportive care, IV mannitol. Children more vulnerable.
	3 hrs	Neurologic: paresthesias, reversal of hot or cold, pain, weakness.				
	2–5 days	Cardiovascular: bradycardia, hypotension, increase in T wave abnormalities.				
Copper	5 min – 8 hrs. usually <1 hr	Nausea, vomiting, blue or green vomitus.	Usually self-limited	Metallic container.	Identification of metal in beverage or food.	Supportive care.
Mercury	1 week or longer	Numbness, weakness of legs, spastic paralysis, impaired vision, blindness, coma. Pregnant women and the developing fetus are especially vulnerable.	May be protracted	Fish exposed to organic mercury, grains treated with mercury fungicides.	Analysis of blood, hair.	Supportive care.
Mushroom toxins, short-acting (muscinol, muscarine, psilocybin, coprius artemetaris, ibotenic acid)	<2 hrs	Vomiting, diarrhea, confusion, visual disturbance, salivation, diaphoresis, hallucinations, disulfiram-like reaction, confusion, visual disturbance.	Self-limited	Wild mushrooms (cooking may not destroy these toxins).	Typical syndrome and mushroom identified or demonstration of the toxin.	Supportive care.
Mushroom toxin, long-acting (amanitin)	4–8 hrs diarrhea; 24–48 hrs liver failure	Diarrhea, abdominal cramps, leading to hepatic and renal failure.	Often fatal	Mushrooms.	Typical syndrome and mushroom identified and/or demonstration of the toxin.	Supportive care, life-threatening, may need life support.
Nitrite poisoning	1–2 hrs	Nausea, vomiting, cyanosis, headache, dizziness, weakness, loss of consciousness, chocolate-brown colored blood.	Usually self-limited	Cured meats, any contaminated foods, spinach exposed to excessive nitrification.	Analysis of the food, blood.	Supportive care, methylene blue.
Pesticides (organophosphates or carbamates)	Few min to few hrs	Nausea, vomiting, abdominal cramps, diarrhea, headache, nervousness, blurred vision, twitching, convulsions, salivation and meiosis.	Usually self-limited	Any contaminated food.	Analysis of the food, blood.	Atropine; 2-PAM (Pralidoxime) is used when atropine is not able to control symptoms and is rarely necessary in carbamate poisoning.
Puffer fish (tetrodotoxin)	<30 min	Parasthesias, vomiting, diarrhea, abdominal pain, ascending paralysis, respiratory failure.	Death usually in 4–6 hours	Puffer fish.	Detection of tetrodotoxin in fish.	Life-threatening, may need respiratory support.
Scombroid (histamine)	1 min – 3 hrs	Flushing, rash, burning sensation of skin, mouth and throat, dizziness, uriticaria, parasthesias.	3–6 hrs	Fish: bluefin, tuna, skipjack, mackerel, marlin, escolar, and mahi mahi.	Demonstration of histamine in food or clinical diagnosis.	Supportive care, antihista-mines.

The most common food-borne illnesses

Norovirus	Contaminated individuals, surfaces, water or food, such as: raw salads, fruit, or seafood, especially oysters.	12 to 48 hrs. 1-3 days until improvement.	Diarrhea, nausea, vomiting, abdominal pain
Salmonella	Raw or under cooked eggs, meat, or poultry. Unpasteurized milk or juice, raw fruits, vegetables.	12 to 72 hrs. 4-7 days until improvement.	Diarrhea, fever, abdominal cramps
Clostridium pertingens	Beef or poultry (especially large roasts), gravy, precooked foods.	6 to 24 hours. Resolves within 24 hrs.	Diarrhea, stomach cramps
Campylo-bacter	Contaminated water, raw or under cooked meat or poultry, unpasteurized milk.	2 to 5 days. May last for up to a week.	Diarrhea (can be bloody), stomach cramps, fever
Staphy-loccoccus aureus	Foods handled by infected people and not cooked before eaten (sliced deli meats, sandwiches, puddings, pastries)	30 mins to 6 hours. Lasts 1 day.	Diarrhea, nausea, stomach cramps, vomit

Massachusetts Department of Public Health
Bureau of Communicable Disease Control
Office of Integrated Surveillance and Informatics Services
305 South Street, Jamaica Plain MA 02130
Phone: ***617-983-6801*** *Confidential Fax:* ***617-983-6813***

Received in ISIS:

ENTERIC DISEASE REPORTING FORM

For assistance filling out this form, call (617) 983-6800

CONFIDENTIAL CASE REPORT

DEMOGRAPHIC INFORMATION

Last Name: First Name: MI:
Address: Apt. #:
City: State: Zip:
Unique Address Condition: ☐ Homeless ☐ Incarcerated
Contact phone: (____) _____-_____ Occupation:
Birth date: _____/_____/_____ Place of birth (e.g. specific country):
Age: _____ ☐ Years ☐ Months ☐ Weeks ☐ Days ☐ Unk
Sex: ☐ Female ☐ Male ☐ Transgender ☐ Unk
Race *(check all that apply)*:
☐ American Indian/ Alaskan Native ☐ Asian ☐ Black/ African American
☐ Native Hawaiian/Pacific Islander ☐ White ☐ Other ☐ Unk
Hispanic: ☐ Yes ☐ No ☐ Unk

CLINICAL INFORMATION

Diagnosis date: _____/_____/_____
Did case have any symptoms? ☐ Yes ☐ No ☐ Unk Symptom onset date: _____/_____/_____
Duration of symptoms: _____ ☐ days ☐ weeks ☐ months

Abdominal cramps	☐ Yes	☐ No	☐ Unk	Abdominal pain	☐ Yes	☐ No	☐ Unk
Anorexia	☐ Yes	☐ No	☐ Unk	Bloating/Gas	☐ Yes	☐ No	☐ Unk
Bloody Stool	☐ Yes	☐ No	☐ Unk	Diarrhea	☐ Yes	☐ No	☐ Unk
Fatigue	☐ Yes	☐ No	☐ Unk				
Fever	☐ Yes (highest temp: ____°F/°C)		☐ No	☐ Unk			
Headache	☐ Yes	☐ No	☐ Unk	Joint aches	☐ Yes	☐ No	☐ Unk
Malaise	☐ Yes	☐ No	☐ Unk	Muscle aches	☐ Yes	☐ No	☐ Unk
Nausea	☐ Yes	☐ No	☐ Unk	Stool with mucus	☐ Yes	☐ No	☐ Unk
Vomiting	☐ Yes	☐ No	☐ Unk	Weight loss	☐ Yes	☐ No	☐ Unk

Other (*specify*): _____

Case hospitalized? ☐ Yes ☐ No ☐ Unk Date hospitalized: _____/_____/_____
Hospital name: Date discharged: _____/_____/_____
Outcome: ☐ Died ☐ Recovered ☐ Unk Date of death: _____/_____/_____
Clinician name and address:
Clinician phone: (_____) _____-_____ Patient record/ chart #:
In the month prior to illness, did the case take antibiotics? ☐ Yes ☐ No ☐ Unk
If yes, what antibiotic(s)? Start date ___/___/___ End date: ___/___/___

DIAGNOSTIC LABORATORY TEST INFORMATION

Organism	Usual incubation (range)	Organism	Usual incubation (range)
☐ *Campylobacter*	2-5 days (1-10 days)	☐ *Giardia*	7-10 days (3-25 days)
☐ *Cryptosporidium*	7 days (1-12 days)	☐ *Salmonella*	12-36 hours (6-72 hours)
☐ *Cyclospora*	7 days (1-2wks)	☐ *Shigella*	1-3 days (12-96 hours)
☐ *Entamoeba histolytica*	1-4 wks (variable)	☐ Shiga Toxin +	10 hours-10 days
☐ *E. coli* O157:H7	3-4 days (1-10 days)	☐ *Yersinia*	3-7 days (1-10 days)
☐ Norovirus	1-2 days (10-72 hours)	☐ Other (*specify*): _____	

Please complete page 2. Include additional laboratory information if available.