

**ANNEXES to**

**ONTARIO'S FOODBORNE ILLNESS  
OUTBREAK RESPONSE PROTOCOL  
(ON-FIORP) 2013**

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**Ontario's guide to a multi-party response to  
foodborne illness outbreak investigations**

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## ANNEX 1. ROLES AND RESPONSIBILITIES

Annex 1 contains a description of each Party's mandate, legislation, and role in Foodborne Hazards and Foodborne Illness Outbreaks.

### *Ministry of Health and Long-Term Care*

#### **Mandate:**

The Ministry of Health and Long-Term Care (MOHLTC) is responsible for the oversight, coordination and management of multi-jurisdictional foodborne illness outbreaks and investigations in Ontario. This mandate is carried out through the Office of the Chief Medical Officer of Health, the Public Health Policy and Programs Branch and the Emergency Management Branch.

The MOHLTC is responsible for developing and maintaining legislation, policies and guidelines that support the reduction of foodborne illness. Public health programs and services in Ontario are delivered by 36 local boards of health through the application of the Ontario Public Health Standards and associated Protocols.

#### **Legislation:**

The Health Protection and Promotion Act, R.S.O. 1990 (HPPA) and regulations provides legislative authority in Ontario for responding to foodborne outbreaks and related food hazards. The purpose of the Act is "to provide for the organization and delivery of public health programs and services, the prevention of the spread of disease and the promotion and protection of the health of the people of Ontario" (R.S.O. 1990, c. H.7, s.2).

#### **Role in Foodborne Illness Outbreaks:**

**Public Health Response Measures:** To coordinate public health actions at the local level or lead these actions provincially as necessary, with the support of Public Health Ontario, as required, to reduce or control the risk of foodborne hazards or the spread of foodborne illness. As required, these actions may include:

- Through the local boards of health, investigating case and contact information related to foodborne illness and investigating causes of the illness through the inspection of food premises and other facilities under relevant regulations of the HPPA.
- Supporting and coordinating food safety investigations and outbreak activities with partner agencies.
- Communicating with key partners and health care professionals, by issuing alerts and notifications (Important Health Notices).
- Leading and coordinating public communications provincially.

## ***Ontario Ministry of Agriculture, Food and Rural Affairs***

### **Mandate:**

The Food Inspection Branch of the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) monitors compliance with legislated standards for a wide variety of food products produced and processed in Ontario, in order to provide for the quality and safety of those foods and to manage food safety risks. Comprehensive science-based food safety programs include licensing, inspection, laboratory testing, monitoring, compliance, and advisory services. Enforcement activities are carried out by the Ministry of Natural Resources (MNR) on OMAFRA's behalf.

**Meat.** The meat inspection program provides for the licensing, routine inspection (of animals, meat and facilities), and audit of meat plants. Meat plants under OMAFRA's jurisdiction include provincially-licensed non-federally registered slaughter plants and free-standing meat plants [as defined in *O. Reg. 31/05 (Meat)* under the *Food Safety and Quality Act, 2001*, S.O. 2001, c. 20,].

**Dairy.** The safe production, handling, and transportation of raw milk are addressed through the *Milk Act*, R.S.O. 1990, c. M. 12 and Regulations, laboratory testing, inspection (through an administrative agreement with the Dairy Farmers of Ontario) and audit activities. All dairy processing plants in Ontario require a provincial licence ('milk' is defined under the *Milk Act* as milk from cows or goats, and does not include milk from other commercialized species such as sheep). Plants marketing dairy products outside of the province are also registered with the CFIA. An agreement between OMAFRA and CFIA outlines routine inspection/audit activities at dairy processing plants in Ontario to ensure no overlap of activities.

**Foods of Plant Origin.** OMAFRA's Foods of Plant Origin program deals with fruit and vegetables (both fresh and minimally processed), honey and maple products. OMAFRA does not have a licensing and inspection function for these products under existing legislation. Educational and advisory efforts, determining food safety risks, developing scientifically sound mitigation strategies and end-product sampling are OMAFRA's focus for this sector, to ensure food products are safe for human consumption. *Ontario Regulation 119/11 – Produce, Honey, and Maple Products* under the *Food Safety and Quality Act, 2001* contains a food safety component backed up by regulatory powers for product detention and seizure. Under *O. Reg. 119/11*, samples of Ontario fruit and vegetables, maple products and honey are collected for testing (e.g., pesticide residues, foodborne pathogens, and other contaminants).

**Eggs.** Ontario Regulation 171/10 under the *Food Safety and Quality Act, 2001* requires all eggs, other than those sold directly to consumers from the producer's premises, to be graded, packed, marked, and labelled at an egg grading station in accordance with the Egg Regulations made under the *Canada Agricultural Products Act*. It also requires all processed egg to be processed, packed, marked, and labelled in accordance with the Processed Egg Regulations made under the *Canada Agricultural Products Act*.

**Animal Health.** The *Animal Health Act, 2009*, S.O. 2009, c. 31 provides for the protection of animal health, for the establishment of measures to assist in the prevention, detection, response, control and recovery from hazards associated with animals that may affect animal health or human health or both, for the regulation of activities related to animals that may affect animal health or human health or both, and for the enhancement of the safety of food and other products derived from animals that humans may consume or use.

## Legislation:

**Meat.** Food Safety and Quality Act, 2001, S.O. 2001, c. 20

- Ontario Regulation 31/05 (Meat)
- Ontario Regulation 222/05 (General)

**Dairy.** *Milk Act*, R.S.O. 1990, c. M. 12

- *Ontario Regulation 753* (Grades, Standards, Designations, Classes, Packing, and Marking)
- *Ontario Regulation 761* (Milk and Milk Products)

**Foods of Plant Origin.** Food Safety and Quality Act, 2001, S.O. 2001, c. 20

- *Ontario Regulation 119/11* (Produce, Honey and Maple Products)
- *Ontario Regulation 222/05* (General)

**Eggs.** Food Safety and Quality Act, 2001, S.O. 2001, c. 20

- Ontario Regulation 171/10 (Eggs and Processed Egg)
- Ontario Regulation 222/05 (General)

**Animal Health.** Animal Health Act, 2009, S.O. 2009, c.31

## Role in Foodborne Illness Outbreaks:

OMAFRA contributes to the prevention, investigation, and control of foodborne hazards or foodborne illness outbreaks through the ministry's administration, compliance, and enforcement activities.

## ***Ministry of the Environment***

### **Mandate:**

The Ministry of the Environment (MOE) is responsible for setting standards and guidelines for environmental contaminants in air, soil, and water in Ontario. Contaminant means any solid, liquid, gas, odour, heat, sound, vibration, radiation, or combination of any of them in the environment resulting directly or indirectly from human activities that may cause an adverse effect such as impairment of the quality of the natural environment for any use that can be made of it, injury or damage to property or to plant or animal life, harm or material discomfort to any person, an adverse effect on the health of any person, impairment of the safety of any person, rendering any property or plant or animal life unfit for human use, loss of enjoyment of normal use of property, and interference with the normal conduct of business. This does not include exposure of workers to substances used, produced, stored, or handled in a workplace, including on a construction site. Since food is one potential source of exposure to persistent contaminants, the MOE also considers contaminant levels in food based on food basket studies, and may adjust the exposure models used to calculate standards and guidelines for various media (e.g., drinking water, air) accordingly. The MOE also has an extensive monitoring program for contaminant levels in sport fish.

The MOE operates the Environmental Registry through which the public can provide input on proposed legislative and regulatory changes that impact the environment and frequently relate to food production as well. It also operates the Spills Action Centre, a 24-hour provincial service for receiving and coordinating responses to reports of spills, adverse drinking water results, and other environmental matters.

Laboratory Services Branch (LSB) provides analytical support to MOE programs and limited services to other Ministries and the public. A variety of samples from air, water, waste, fish, other biota, soil, sediments, and vegetation are analyzed by LSB. The MOE LSB provides complementary support to other agencies, as requested and within available resources in areas where they have unique expertise, such as analysis of dioxins and other toxic organic compounds or aquatic toxicology, which regularly involves assessment of food samples. The Environmental Monitoring and Reporting Branch also provides local assessment of potential environmental contaminants, in real time during emergencies, through the mobile Trace Atmospheric Gas Analyzer units for road travel, or vessels capable of transit on the major waterways.

Field staff in the Operations Division and Drinking Water Management Division carry out inspections, abatement activities and investigations of potential and confirmed environmental hazards, such as industrial spills and other unplanned contaminant releases to the natural environment, or drinking water system contamination events which could put safe food production or processing at risk. The Ministry of the Environment is also the lead ministry for drinking water emergencies, and Drinking Water Management Division would carry out follow-up activities in response to contamination events or waterborne illness associated with any drinking water system regulated under the Safe Drinking Water Act, 2002, S.O. 2002, c. 32.

### **Legislation:**

The MOE administers as a lead, or jointly, several provincial acts that touch on the production of safe food. MOE administers the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 and regulations that provide for the protection of drinking water in the province through the regulation of both drinking water systems and drinking water testing laboratories and the establishment of drinking water standards. MOE jointly administers *the Nutrient Management Act*, 2002, S.O. 2002, c. 4 with OMAFRA and has designated responsibilities for inspection and enforcement.

MOE administers *Ontario's Pesticides Act*, R.S.O. 1990, c. P. 11 and *Regulation 63/09* which provides the province's framework for regulating the sale, use, transportation, storage, and disposal of pesticides to protect human health and the natural environment. A pesticide product must be registered by HC's Pest Management Regulatory Agency (PMRA) and classified by the MOE for sale and use in Ontario. A pesticide classification system consisting of eleven classes has been established under provincial legislation to regulate all aspects of pesticide sale and use.

Additionally, the MOE administers the *Environmental Protection Act*, R.S.O. 1990, c. E. 19 and the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40 which have more general impacts and linkages to food production.

Under the *Emergency Management and Civil Protection Act*, O. Reg. 380/04, and related Order in Council the Minister of the Environment is responsible for developing an emergency response plan for drinking water and spill emergencies. MOE works closely with the MOH or CMOH, who is the person/authority with the mandate for health hazard and health risk assessments, and with municipal officials and other agencies that may become involved in drinking water related events.



## **Role in Foodborne Illness Outbreaks:**

With the exception of drinking water related outbreaks or hazards, the role of the MOE in foodborne hazards or illness outbreaks is limited to a supporting role and to situations where the incident may require application of the various legislation that falls under its jurisdiction and mandate.

The MOE would play its role when requested by OMAFRA or MOHLTC.

For situations related to drinking water, MOE would play a lead role with emergency response, and with investigations, follow-up, and corrective actions applicable to any drinking water system that is regulated under the Safe Drinking Water Act, 2002, S.O. 2002, c. 32. If no such system is involved, MOE would play a supporting role in a waterborne illness investigation when requested by the MOHLTC, PHO, OMAFRA, or a BOH.

## ***Ministry of Natural Resources***

### **Mandate:**

The Ministry of Natural Resources (MNR) currently administers an interim food fish safety program that includes audits of Non-Federally Registered Fish Processors (NFRFPs). The MNR program was designed to protect human health until a new Ontario food safety program for fish is implemented.

### **Legislation:**

MNR administers the *Fish Inspection Act*, R.S.O. 1990, c. F.18 (FIA), which together with *Quality Control Regulation 456* establishes standards for the handling and processing of fish. The FIA and its regulations prohibit the sale of tainted, decomposed, or unwholesome fish for human consumption and set out standards for the safe handling and processing of fish, as well as those for facility design and operation.

### **Role in Foodborne Illness Outbreaks:**

MNR has limited enforcement options under the FIA. Its role during a foodborne hazard or foodborne illness outbreak is limited. When another agency identifies a potential human health risk associated with products from a NFRFP, MNR's expectation is that it would be immediately notified of the situation, that it would take an active role in the investigation, if appropriate, and that all investigation reports and sample/test results be shared.

In the event of a foodborne hazard or illness outbreak, MNR can lead fact-finding investigations of NFRFP facilities where a foodborne health hazard is identified. If, during such an investigation, there are reasonable grounds to believe that an offence against the FIA has been committed, MNR inspectors can seize the product involved. However, the FIA does not give MNR the authority to order closure of an operation or conduct a recall. Agencies such as the CFIA, MOHLTC, and/or BOHs would be required to assist in this regard.

In the event of a recall initiated by CFIA, where appropriate, MNR would participate in joint plant-level investigations and follow-up until the hazards are controlled. Additional support could include coordinating the collection of product samples, providing and interpreting applicable lab results, and assisting in the collection of information from the plants such as inventories and distribution lists of any affected products.

## ***Public Health Ontario***

### **Mandate:**

The mandate of Public Health Ontario (PHO) is, as set out in section 1 of the *Ontario Agency for Health Protection and Promotion Act*, to enhance the protection and promotion of the health of Ontarians and to contribute to efforts to reduce health inequities through the provision of scientific and technical advice and support to those working across sectors and to carry out and support activities such as population health assessment, public health research, surveillance, epidemiology, planning, and evaluation.

### **Legislation:**

The Ontario Agency for Health Protection and Promotion Act.

Selected corporate objects of PHO as set out in the OAHPP Act include:

- a) to provide scientific and technical advice and support to the health care system and the Government of Ontario in order to protect and promote the health of Ontarians and reduce health inequities;
- b) to develop, disseminate and advance public health knowledge, best practices, and research in the areas of population health assessment, infectious diseases, health promotion, chronic diseases, injury prevention, and environmental health;
- d) to develop, collect, use, analyse and disclose data, including population health, surveillance and epidemiological data, across sectors, including human health, environmental, animal, agricultural, education, community and social services and housing sectors, in a manner that informs and enhances healthy public policy and public health planning, evaluation and action;
- e) to undertake, promote and co-ordinate public health research in co-operation with academic and research experts as well as the community;
- g) to establish, operate and maintain laboratory centres and to provide laboratory services;
- j) as directed by the CMOH, to provide scientific and technical advice and operational support to any person or entity in an emergency or outbreak situation that has health implications.

Consistent with the OAHPP Act, the July 2011 Public Health Architecture agreement between the MOHLTC and PHO confirmed PHO would be responsible for the following public health functions and responsibilities: surveillance, outbreak investigation, advice on outbreak control measures, scientific and technical advice and support on communicable disease and environmental health matters. Under the same agreement, however, the MOHLTC continues to be responsible for provincial-level outbreak control.

## **Role in Foodborne Illness Outbreaks:**

PHO conducts routine surveillance of infectious diseases through analysis of integrated Public Health Information System (iPHIS) and monitoring incident cases reported through the PHOL. Upon identifying or being notified of clusters or outbreaks of foodborne illness, PHO will provide scientific and technical support to public health unit(s) during the investigation. During multi-jurisdictional outbreaks, PHO will provide scientific and technical advice to the CMOH. Based on the information at hand, PHO may advise that an Ontario Outbreak Investigation Coordinating Committee Assessment (ON-OICC) call is required. During a provincial outbreak, PHO will continue to support the CMOH through ongoing activities including laboratory, surveillance and environmental investigations in coordination and communication with public health units and other ON-OICC partners.

The Public Health Ontario Laboratories (PHOL) provides primary clinical and food testing at the request of BOHs, in order to support foodborne and enteric outbreak investigations. The PHOL coordinates and provide reference services for microbial strain identification and typing of isolates submitted from hospital and private laboratories, and participates in national food-borne illness surveillance programs such as PulseNet Canada and NESP.

## **Operational Support to Other Parties**

- **Surveillance and Assessment:** track and collect reportable illness activity through iPHIS and other data sources and provide analysis and interpretation of this information to assist in responding to foodborne outbreaks.
- **Foodborne Outbreak Investigation:** response activities aimed at determining the cause of an outbreak, to inform appropriate interventions to manage the outbreak. Typically, outbreak investigations are conducted by boards of health, with coordination and support provided provincially for multi-jurisdictional outbreaks.
- Support the CMOH through ongoing activities, including laboratory, surveillance and environmental investigations, in coordination and communication with boards of health and other ON-OICC partners.

## ***Canadian Food Inspection Agency***

### **Mandate:**

The Canadian Food Inspection Agency (CFIA) is dedicated to safeguarding food, animals and plants, which enhances the health and well-being of Canada's people, environment, and economy.

### **Legislation:**

The Agency administers and/or enforces 13 federal acts and their respective regulations, of which 5 acts and 13 regulations are specific to food safety. The five acts include the *Meat Inspection Act*, R.S.C., 1985, c. 25 (1st Supp.), as amended; the *Fish Inspection Act*, R.S.C., 1985, c. F-12, as amended; and the *Canada Agricultural Products Act*, R.S.C., 1985, c. 20 (4th Supp.), as amended. The *Food and Drugs Act*, R.S.C., 1985, c. F-27, as amended and the *Consumer Packaging and Labelling Act*, R.S.C., 1985, c. C-38, as amended are overarching Acts that apply to all food and also provides the legislative authority for the CFIA to protect Canadians from unfair market practices by the enforcement of the fraud and labelling provisions.

### **Role in Foodborne Illness Outbreaks:**

The CFIA delivers inspection and enforcement activities related to food on behalf of the federal government. CFIA's role in foodborne hazard or foodborne illness outbreaks includes food safety investigations, product testing, recall activities, including advising the public of recalls and monitoring the effectiveness of recalls, participating on Ontario Outbreak Investigations Coordinating Committees, as well as regulatory compliance and enforcement activities.

When a potentially contaminated food has been identified which could pose a risk to the public, CFIA launches a food safety investigation to determine the nature, extent and cause of the problem; to confirm whether a health hazard exists; and to implement the appropriate risk management strategy.

This work is done collaboratively with Parties guided by MOUs. CFIA works closely with all parties to share expertise and co-ordinate activities to facilitate the food industry's compliance with both federal and provincial regulations and the delivery of emergency response.

The food safety investigation includes tracing foods from the retail level through distribution to production or processing facilities to pinpoint a suspected source of the problem. Information obtained throughout the food safety investigation provides the basis for the assessment of risk and the development of appropriate risk management strategies to control affected products.

The food industry carries out most recalls voluntarily. However, if a company is unwilling or unable to conduct the recall voluntarily, the Minister of Agriculture and Agri-Food can, under the *Canadian Food Inspection Act*, order a company to recall a product where the Minister believes on reasonable grounds that it poses a risk to public, animal, or plant health. CFIA officials also verify that products have been recalled effectively.

Groups within CFIA that play key roles in the food safety response to foodborne hazard and foodborne illness outbreak situations include:

- Regional inspection staff and the Area Recall Coordinator (ARC) are actively involved in the food safety investigation. The ARC is the usual first point of contact within CFIA for BOHs, MOHLTC, and PHO. Should an ON-OICC assessment call take place and the CFIA be invited to attend, both the ARC and the Office of Food Safety (OFSR) should participate on the call.
- The OFSR is responsible for the coordination and consistency of decision making on food safety issues and recalls. The OFSR is the usual first point of contact for national and international food safety related issues. As well, the OFSR is now providing the link with the Food Directorate at HC for obtaining health risk assessments, as appropriate.
- The Food Safety Division of the Food Safety Strategies Directorate and the Ontario Imported and Manufactured Food Program Network are responsible for providing scientific analysis and guidance to staff.

## ***Health Canada***

### **Mandate:**

Health Canada (HC) is the Federal department responsible for helping Canadians maintain and improve their health, while respecting individual choices and circumstances.

### **Legislation:**

HC administers the food sections of the *Food and Drugs Act* and Regulations and the *Consumer Packaging and Labelling Act*, which are overarching legislation that apply to all foods sold in Canada, whether manufactured in Canada or imported. The Act and Regulations govern the sale and advertisement of these products to ensure their safety and prevent deception. The Act and Regulations also set out the labelling requirements for food.

Health Canada's food safety responsibilities include:

- the establishment of policies, regulations and standards related to the safety and nutritional quality of all food sold in Canada;
- the regulation of pesticides;
- the evaluation of the safety of veterinary drugs used in food-producing animals;
- responsibilities with respect to First Nation communities south of 60° parallel; and
- food served on common carriers (e.g., cruise ships, aircraft, passenger ferries and passenger trains).

### **Role in Foodborne Illness Outbreaks:**

The Health Products and Food Branch (HPFB) of HC provides, upon request, health risk assessments on food-related hazards to CFIA or other Parties (e.g. provincial governments), as per MOU with HC, CFIA, and PHAC. Performing health risk assessments is part of HC's roles and responsibilities in the context of foodborne hazards and foodborne illness outbreaks and food safety.

Within HPFB, the Food Directorate:

- focuses on issues relating to microbial pathogens, chemical contaminants, food allergens or other potential health hazard in foods;
- provides scientific advice and analytical surge capacity for analyzing microbiological contaminants, chemical contaminants, food additives, food packaging materials and incidental additives, and food allergens in food and clinical samples;
- provides national reference diagnostic services for foodborne botulism, listeriosis and viruses; and

- provides risk management advice, including public communication.

The Veterinary Drugs Directorate (also within HPFB) focuses on issues related to veterinary drug residues used in food-producing animals, exceeding the legal limits. The PMRA provides, upon request, health risk assessments on pesticide residues exceeding the legal limits to the CFIA or other Parties. It also contributes to investigations involving incidences of pesticide residues above legal limits.

The Healthy Environment and Consumer Safety (HECS) Branch conducts food safety inspections and audits on common carriers (e.g., cruise ships, aircraft, passenger ferries, passenger trains) and their ancillary services (e.g. flight kitchens). HECS also investigates suspected water or foodborne illness outbreaks stemming from these conveyances and their ancillary services.

First Nations and Inuit Health (FNIH) provides national support and technical advice in the investigation of foodborne illness outbreak for First Nations communities on reserve south of 60° parallel. The Environmental Public Health Division within FNIH is the national contact point between FNIH regional offices and other involved Parties (e.g., CFIA) to coordinate efforts during a suspected or confirmed foodborne outbreak in First Nations communities. FNIH regional staff disseminates food recall information issued by the CFIA; carries out food safety investigations in food establishments; conducts visits at facilities with populations at greater risk (e.g., daycare, treatment centres, hospitals); and provides public health messaging as well as public education and food handler training sessions, as needed, in affected First Nations communities.



## ***Public Health Agency of Canada***

### **Mandate:**

The mission of the Public Health Agency of Canada (PHAC) is to promote and protect the health of Canadians through leadership, partnership, innovation, and action in public health. The mandate of PHAC is to promote health; prevent and control chronic diseases and injuries; prevent and control infectious diseases; prepare for and respond to public health emergencies; serve as a central point for sharing Canada's expertise with the rest of the world; apply international research and development to Canada's public health programs; and strengthen intergovernmental collaboration on public health and facilitate national approaches to public health policy and planning.

### **Legislation:**

PHAC was established in September 2004 and was confirmed as a legal entity in December 2006 by the *Public Health Agency of Canada Act* (Bill C-5). To address concerns about human pathogens and toxins, Parliament passed the *Human Pathogens and Toxins Act* (HPTA) in 2009. PHAC is charged with enforcing the HPTA and developing a program and regulatory framework.

At the Federal level, PHAC, HC, and CFIA have legislated responsibilities for responding to food-borne illness related events. In 2008, a trilateral MOU between PHAC, HC, and CFIA was finalized. The trilateral MOU specifies the roles and responsibilities of the CFIA, HC, and PHAC as they relate to the common issues that directly or indirectly have an impact on human health including food safety and nutrition, infectious disease outbreak management, and emerging zoonotic diseases. These MOUs and corresponding Roles and Responsibilities Frameworks reference the FIORP (Foodborne Illness Outbreak Response Protocol) as a key guidance document. FIORP was collectively developed by PHAC, HC, and CFIA, in consultation with P/T stakeholders to enhance the collaboration and overall effectiveness of response during multi-jurisdictional food-borne illness outbreaks.

### **Role in Foodborne Illness Outbreaks:**

PHAC responds to multi-jurisdictional infectious disease outbreaks and acts as the Canadian International Health Regulation focal point, which represents the national centre designated to communicate with the World Health Organization (WHO).

Within the Government of Canada, the usual first point of contact for notification of issues related to actual or potential food-borne illness outbreaks and requests for content expertise/support for food-borne outbreak investigation is the Centre for Food-borne, Environmental and Zoonotic Infectious Diseases (CFEZID), within the Infectious Disease Prevention and Control Branch of PHAC. CFEZID is responsible for the following:

- conducts national surveillance for enteric illnesses;
- provides consultation, content expertise, coordination, and leadership in outbreak investigations;
- coordinates multi-jurisdictional outbreaks involving more than one P/T or country where appropriate;
- interprets and comments on the strength of evidence collected during the epidemiological investigation of food-borne illness outbreaks;
- provides training in outbreak response/investigation methods;
- coordinates and collaborates with international surveillance; and
- manages Enteric Public Health Alerts.

The National Microbiology Laboratory (NML) provides reference services for strain identification and characterization, national laboratory-based surveillance, and dissemination of information through PulseNet Canada and the National Enteric Surveillance Program (NESP). The NML, through PulseNet Canada, is the usual first point of contact for P/Ts sharing strain identification data and the detection of clusters of strains that are occurring in more than one P/T or country, indicating the potential for multi-jurisdictional food-borne outbreaks.

PHAC has public health capacity and resources that can be mobilized to assist in the investigation of food-borne illness outbreaks. Programs include:

- The Canadian Field Epidemiology Program, in the Office for Public Health Practice, which provides specialized training for health professionals in the practice of applied epidemiology. Field epidemiologists are deployed to assist in field investigations of food-borne illness outbreaks within the jurisdiction of their placement and are mobilised to local and P/T public health authorities. Field epidemiologists may also assist in international outbreak investigations.
- The Canadian Public Health Service (CPHS) is a program to recruit and deploy qualified staff in consultation with interested health jurisdictions, and to provide these staff with ongoing field experience and training in order to build public health capacity across the country. The CPHS provides public health support to provincial, territorial, or local health jurisdictions and to public-health-oriented NGOs and may be involved in enhancing routine surveillance and epidemiological work. The CPHS is also prepared to deal with broader public health issues as well as outbreak or pandemic duties as these needs may emerge.

## **Boards of Health**

### **Mandate:**

The MOHLTC's Ontario Public Health Standards, 2008 sets out the following mandate for the boards of health (BOHs):

- To receive and investigate reports of reportable diseases and disease outbreaks in accordance with the *Health Protection and Promotion Act* and to identify and provide an appropriate response.
- To ensure that food is stored, prepared, served, and distributed in a manner consistent with accepted public health practices.
- To stop the sale or distribution of food that is unfit for human consumption by reason of disease, adulteration, impurity or other cause.
- To support and assist Food Recalls (in accordance with the Public Health Standards, 2008).

In general, public health inspectors routinely inspect retail food premises establishments or retail areas of food manufacturing / processing plants that have direct sale /supply of food to the public as well as food manufacturing/processing plants that are not under the jurisdiction of other levels of government. The frequency of inspection for each premise is based upon their assessed risk status (high, moderate, or low).

### **Legislation:**

The legislation under which the BOHs carry out their mandate includes the *Health Protection and Promotion Act, Revised Statutes of Ontario*, 1990 Chapter H.7 and its associated regulations:

- *Ontario Regulation 558/91* (Specification of Communicable Diseases);
- *Ontario Regulation 559/91* (Specification of Reportable Diseases);
- *Ontario Regulation 569/90* (Reports); and
- *Ontario Regulation 562/90* (Food Premises).

### **Role in Foodborne Illness Outbreaks:**

The BOHs would generally request ongoing joint inspections of the food premises plant throughout investigation in an attempt to provide thorough and seamless inspection with prompt and accurate communication between agencies involved (i.e., CFIA, OMAFRA) and to attempt to avoid the potential for overlap of inspection duties, investigative functions, expenses, laboratory testing, or sampling and/or the potential for inconsistent or confusing food safety messaging to the media, the public, or other agencies (e.g., laboratory, MOHLTC, PHAC).

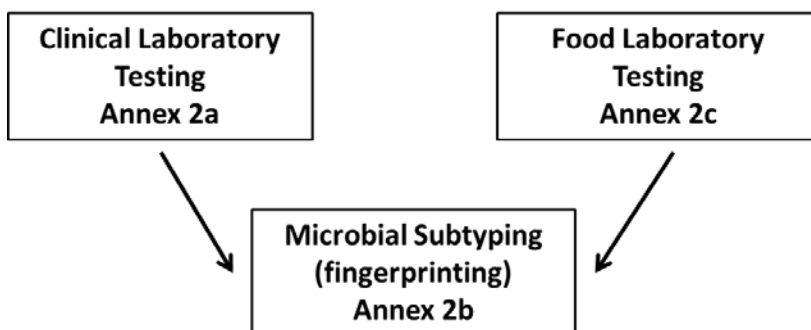
The role of the BOHs in the investigation of food premises associated with foodborne hazards or foodborne outbreak illness incidents include:

- Receiving and investigating any report of a foodborne hazard, suspect foodborne illness, or enteric illness cluster. Investigation may include attempts to identify risk factors and potential sources the hazard or illness. If food from a food premises is believed to be the source of a hazard or illness, and the BOH is not the primary agency responsible for its routine inspection, the appropriate agency will be notified. Where warranted, arrangements for collaboration and joint inspections with all necessary agencies (i.e., OMAFRA, CFIA) will be made;
- Investigation of any cases/contacts involved in the foodborne hazard or foodborne illness incident. This may include requesting suspect cases to submit stool samples in attempts to identify a causative agent for the incident. The BOH may also recommend control measures for the suspect cases to follow in order to reduce secondary spread of the pathogen;
- Public notification regarding the foodborne hazard or foodborne illness incident as required, in collaboration with the ON-OICC;
- Investigation may include interviewing owners/operators/staff at the food premises, sampling of suspect foods, water samples, seizure and possible condemnation of suspect foods and/or equipment, review of records/reports/receipts, observing food handling practices and food premises operations, exclusion of ill food handlers, possible requirement for food handlers to submit clinical samples for laboratory analysis, possible closure of the food premises, and/or restriction on certain food handling activities within the food premises; and
- The local public health inspector may also be required to implement enforcement activities during investigation of a food premises associated with a foodborne hazard or foodborne illness outbreak involving non-compliance with applicable legislation. Potential actions may include: Issuing Orders under Section 13 (health hazard), Section 19 (seizure, examination, destruction), and/or Section 22 (communicable disease) of the *HPPA*, Provincial Offences Notices, and/or Summons.

Upon suspicion and/or confirmation of food safety or sanitation issues beyond the retail level of the operation, public health inspectors would provide notification to the appropriate agencies (i.e., CFIA, OMAFRA) and would include, upon request, inspection details, and any findings.

## ANNEX 2. LABORATORY TESTING FOR FOODBORNE ILLNESS IN ONTARIO

Laboratory testing for foodborne and enteric pathogens is performed routinely for clinical diagnosis, surveillance, and food complaints. The laboratories in Ontario performing this testing, the testing menu, and specimen flow are described in this section. An overview of the laboratory testing during foodborne illness outbreak investigations is presented (Figure 1).



**Figure 1:** Overview of laboratory testing for foodborne illness in Ontario.

In Ontario, laboratory testing during foodborne illness outbreak investigations use the same laboratory infrastructure used for routine testing. Early communication with the laboratories during foodborne illness outbreak investigations is critical to ensuring optimal specimen collection, optimal test selection, provision of necessary information with the specimen, and expedited testing. Please see below for contact information of laboratory support during foodborne illness outbreaks (Table 1).

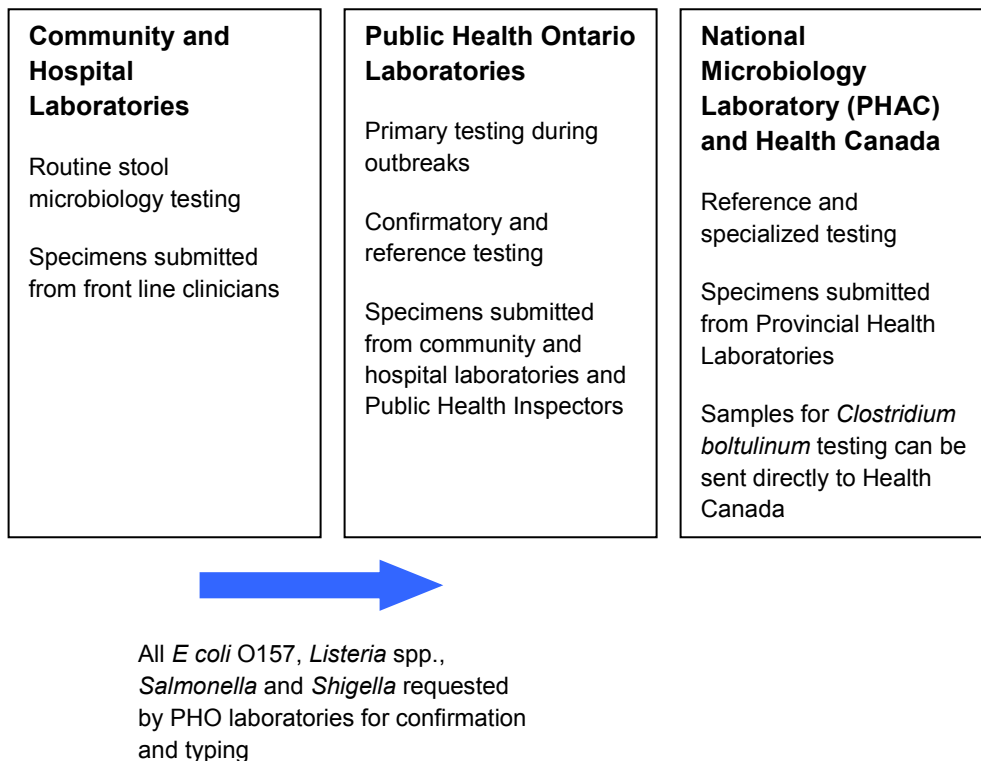
**Table 1:** Laboratory contact information during foodborne illness outbreak investigations.

Human specimens	Food specimens
PHOL customer service center: 416-235-6556 or 1-877-604-4567	PHOL customer service center: 416-235-6556 or 1-877-604-4567
	CFIA E-mail: <a href="mailto:OntARC@inspection.gc.ca">OntARC@inspection.gc.ca</a> ; Tel: 416-665-5049

## Annex 2a. Laboratory Testing of Clinical Specimens during Foodborne Outbreaks

In non-outbreak settings, primary testing of clinical specimens is primarily performed at private and hospital laboratories in Ontario. All isolates of *E coli* O157, *Listeria*, *Salmonella*, and *Shigella*, are requested to be sent to the PHOL for confirmation and typing (Figure 2). For full details of laboratories performing clinical testing of foodborne pathogens, see Table 2.

During foodborne outbreak investigations, clinical specimens can be sent directly to PHOL to ensure expedited testing. A single exception is testing for *Clostridium botulinum*, which should be directed to the Botulism Reference Service of HC (Table 2). If in doubt, please contact the PHOL customer service line at 416-235-6556 or 1-877-604-4567 for detailed instructions for clinical testing.



**Figure 2:** Testing laboratories for foodborne pathogens in clinical specimens Ontario. Please note that during an outbreak stool samples can be sent by Public Health Inspectors directly to PHOL for expedited testing.

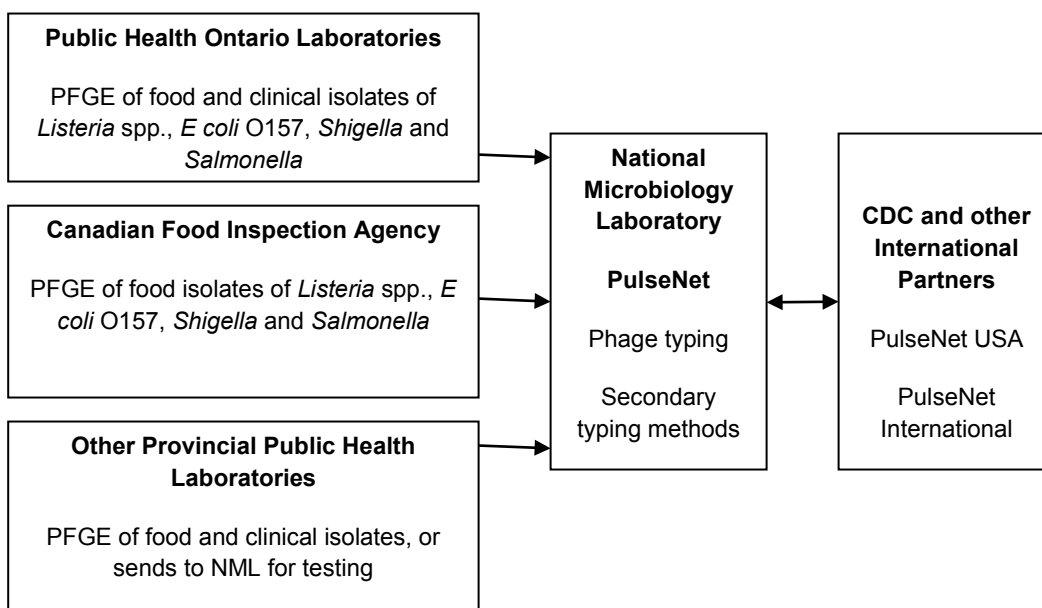
**Table 2:** Laboratories testing clinical specimens in Ontario.

Laboratory	Primary function	Testing available	Additional notes
Community and hospital laboratories	Routine testing of bacterial foodborne pathogens	Stool: <i>Salmonella</i> , <i>Shigella</i> , <i>Campylobacter</i> , <i>E. coli</i> O157, possibly <i>Yersinia</i> Sterile sites: all bacterial pathogens including <i>Listeria monocytogenes</i>	Please consult local laboratory for details. If confirmation and/or typing required must be sent to PHOL for further testing (for details please contact the PHOL customer service center: 416-235-6556 or 1-877-604-4567)
PHOL	Bacterial reference testing, subtyping and expedited testing for outbreak investigation. Enteric virology and parasitology	Outbreak testing includes: <i>Salmonella</i> , <i>Shigella</i> , Shiga toxin producing <i>E coli</i> (including <i>E coli</i> O157), <i>Campylobacter</i> , <i>Yersinia</i> , <i>Clostridium perfringens</i> , Norovirus, Stool parasites	Please see specimen collection guide for details ( <a href="http://www.oahpp.ca/services/specimen-collection-guide.html">http://www.oahpp.ca/services/specimen-collection-guide.html</a> ). If related to an outbreak investigation, please contact PHOL customer service center: 416-235-6556 or 1-877-604-4567
NML	Reference testing	Additional testing for foodborne bacterial and viral species.	Please arrange testing through the PHOL customer service center: 416-235-6556 or 1-877-604-4567
HC Botulism Service	Botulism testing of clinical and food	<i>Clostridium botulinum</i>	Please contact directly: Botulism Reference Service Health Canada, Tel. 613- 957-0902
HC Virology Service	Reference testing for enteric viruses	Hepatitis A virus, caliciviruses (e.g. norovirus)	Please arrange testing through PHOL customer service center: 416-235-6556 or 1-877-604-4567
HC Listeriosis Reference Service	Reference testing for <i>Listeria monocytogenes</i>	<i>Listeria monocytogenes</i>	Please arrange testing through PHOL customer service center: 416-235-6556 or 1-877-604-4567

## Annex 2b. Typing of Foodborne Pathogens

Typing or “fingerprinting” of foodborne pathogens is available for bacterial and viral foodborne pathogens to assist in outbreak investigation. When typing will be of benefit to investigation, testing can be performed at a variety of laboratories within Ontario (Figure 3).

Typing of clinical isolates of foodborne bacteria is available at the PHOL as part of the PulseNet. Typing of food isolates of these bacteria can be performed at the CFIA or PHOL, depending on where the isolate was identified. Typing of Hepatitis A virus is available at NML, and typing of norovirus is available at HC's Virology Reference Service laboratories.



**Figure 3:** Laboratory infrastructure for typing of bacterial foodborne pathogens.



**Table 3:** Laboratories that perform typing for foodborne pathogens in Ontario.

Laboratory	Testing available
PHOL	Pulsed field gel electrophoresis (PFGE), common bacterial foodborne pathogens Member of PulseNet Canada
CFIA	PFGE for <i>E coli</i> O157, <i>Listeria</i> , <i>Salmonella</i> , and <i>Shigella</i> Member of PulseNet Canada
HC	<i>Listeria</i> PFGE Norovirus subtyping Member of PulseNet Canada
NML	PulseNet Canada Hepatitis A virus subtyping Secondary typing methods for bacterial pathogens

N.B. If related to an outbreak investigation, please contact the PHOL customer service center at 416-235-6556 or 1-877-604-4567 for assistance.

## Annex 2c. Laboratory Testing of Food and Environmental Sources

Critical to the success of foodborne illness outbreak investigations is the ability to rapidly communicate and integrate laboratory results to the ON-OICC from all testing laboratories. Standardization of specimen collection, accompanying sample information, and the use of compatible testing methodologies is of paramount importance. This section outlines the laboratories that offer food testing and the laboratories that suspect food should be sent to for microbiological testing during an outbreak investigation.

Detailed information of food samples submitted for testing will enable the rapid and accurate mitigation of a food hazard once there is evidence that a food product is contaminated. The following information should be collected when available:

- A photo or photocopy of the product label would facilitate this data gathering process
- Brand name
- Common name
- Unit size (e.g., 50g, 125 ml)
- Lot number(s)
- Best before date/Expiry date/Use by date/Durable life date
- Packed on date/Manufacturing date
- Universal product code (UPC)
- Name of Manufacturer/Importer/Legal Agent (if available on the packaging)
- Label claims/preparation or serving instructions
- Container type (e.g., vacuum pack, plastic rigid container)
- Shelf life of product (if possible)
- Where the sample was taken (e.g., at the suspect place of eating, case's home)
- Storage information (e.g., frozen, refrigerated, non- refrigerated)
- Indicate if this is an opened or unopened sample
- Indicate the number of samples/sub-samples taken

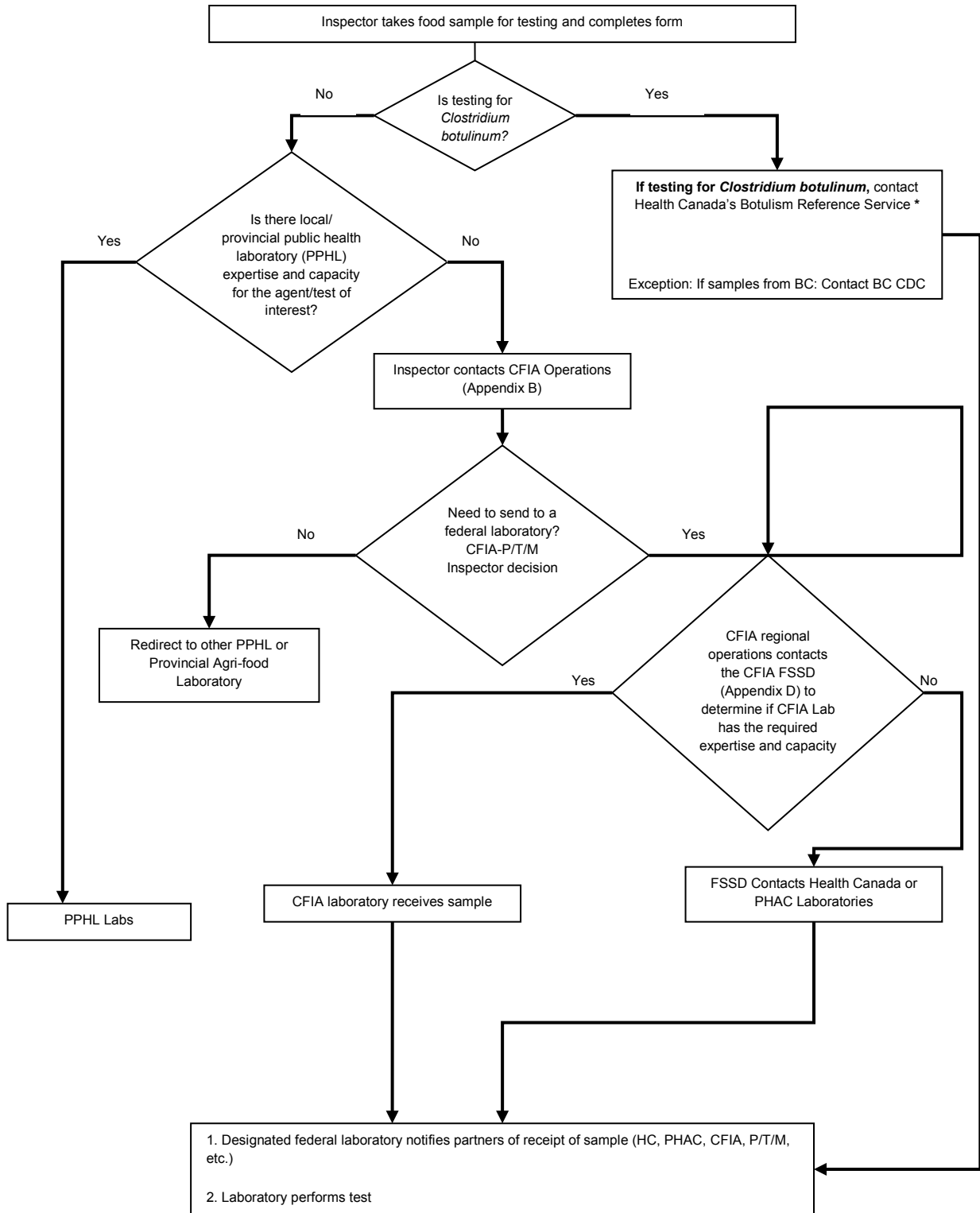
In the investigation of a food source during outbreak investigations, public health inspectors can send suspected food to PHOL for testing for bacterial pathogens. Detailed information about specimen collection, requisition requirements, and transportation of specimens to be tested at the PHOL are available in the public health inspector's

guide:  
<http://www.oahpp.ca/resources/documents/clinicalguidelines/OAHPP%20PHI%20Guide%20March%202010.pdf>

Food testing is also available at CFIA laboratories, and may be considered for referral by PHOL in certain situations, or when there is a need for additional testing capability or capacity. For further information, please contact the CFIA through the area recall coordinator (ARC) (Table 4). The recommended flow of food specimens to laboratories for testing during foodborne illness investigation is presented (Figure 4).

**Table 4:** Laboratories performing food and environmental testing in Ontario for foodborne illness outbreak investigations.

Laboratory	Testing available	Additional notes
PHOL	Support for Public Health Investigators during food and water-borne illness investigation. For a full list of tests available, please consult the PHI guide for full details. ( <a href="http://www.oahpp.ca/resources/documents/clinicalguidelines/OAHPP%20PHI%20Guide%20March%202010.pdf">http://www.oahpp.ca/resources/documents/clinicalguidelines/OAHPP%20PHI%20Guide%20March%202010.pdf</a> )	If related to an outbreak investigation, please contact PHOL customer service center: 416-235-6556 or 1-877-604-4567
CFIA	Offer support to PHO labs for food microbiology testing services, if required. PFGE typing capability for food isolates.	E-mail: <a href="mailto:OntARC@inspection.gc.ca">OntARC@inspection.gc.ca</a> Tel: 416-665-5049
HC	Botulism Reference Service, Listeria Reference Service, Virology Reference Service	
MOE	Offers laboratory testing support for MOE drinking water inspectors and PHO in the event of a waterborne outbreak	
University of Guelph Laboratories	Laboratory testing in support OMAFRA's food inspection programs under the terms of the OMAFRA-University of Guelph Partnership 2008-2018	



**Figure 4:** Process diagram for directing food samples during epidemiological/public health/food safety investigations to the federal laboratory network. (From the Standard Operating Procedure for Directing Food Samples Collected during Epidemiological/Public Health/Food Safety Investigations to the Federal Laboratory Network).

## **ANNEX 3. ON-FIORP CONTACT LIST**

The ON-FIORP Contact List will be maintained by MOHLTC. Names and contact information of ON-FIORP Primary Representatives which are involved in the multi-Party coordination of foodborne hazard and illness outbreak response activities are provided. Upon notification by the ON-OICC Lead Agency, the ON-FIORP Primary Representative will be responsible for notifying and providing regular updates to their senior officials. The ON-FIORP Primary Representative ensures the appropriate representation from their respective organizations on the ON-OICC.

The ON-FIORP Contact List is updated regularly to ensure that it is accurate and current, and distributed electronically to Parties and BOH representatives involved with the implementation of the ON-FIORP. In addition to regular reviews, any changes to the contact names provided to the working group will be made immediately and a new ON-FIORP Contact List will be distributed to those named on the list.

To obtain a current copy of the ON-FIORP Contact List or to make a change to the contact names provided, please contact the MOHLTC.

