

AT A GLANCE

Considerations for Food Safety Investigations at Food Premises during an Outbreak

Published: January 2023

Background

When food premises are implicated in a national or provincial foodborne illness outbreak investigation, public health inspectors (PHIs) from local health units may be requested to conduct site visits to collect information and take appropriate actions. The evidence gathered during these visits is very important for the ongoing management of and response to the outbreak investigation.

Purpose

The purpose of this reference document is to provide technical guidance to PHIs in Ontario during provincial and national foodborne outbreak investigations when conducting site visits at food premises of interest. Its purpose is to provide considerations on how to prepare for and conduct site visits, collect samples and share information with partner agencies to support the outbreak investigation.

The goal of a site visit is to gather as much relevant information as possible in a timely fashion. While it is preferable to avoid multiple site visits, it is recognized that the food safety investigation process is an iterative process, and new developments may warrant additional site visits.

Depending on the available epidemiological information, a suspect food item may or may not have been identified. The objectives of onsite food safety investigation are to:

1. Collect information on food items of interest to enable traceback and traceforward and determine if there is convergence in its distribution, a common supplier, or producer/manufacturer
2. Conduct food sample collection (ideally a closed or intact sample) that would be representative of the food consumed by case(s) during the exposure period of interest (i.e., same production lot)
3. Determine if improper food handling practices and/or poor hygiene contributed to cross-contamination of food.

Scope

This reference document is intended to complement already established procedures and is not meant to replace existing inspection forms, standard operating procedures, protocols or guidelines prescribed by local public health units (PHUs) or the Ministry of Health (MOH). The principles and recommendations outlined in this reference document can be applied to any foodborne illness investigation and traceback

activities. More specifically, it is intended to assist PHUs so that they can effectively conduct food safety follow-up and collaborate with outbreak investigating partners (national or provincial) in carrying out their responsibilities as part of an active national Outbreak Investigation Coordinating Committee (OICC) or an Ontario Outbreak Investigation Coordinating Committee (ON-OICC), as stipulated by [Canada's Foodborne Illness Outbreak Response Protocol \(FIORP\)](#)¹ and respectively [Ontario Foodborne Illness Outbreak Response Protocol \(ON-FIORP\)](#).²

Preparation for the site visit or joint investigation

Review past inspection, foodborne illness complaints, and compliance records of the food premises. Take note of any repeated or critical infractions observed and confirm during the visit that they have been addressed (e.g., improper food handling, temperature abuse).

Review the table in [Appendix A](#) to see what information related to specific food items you may need to collect during your site visit.

Review the menu for the food premises, keeping in mind that some dishes may not be on the regular menu (e.g., daily specials, seasonal dishes, special events).

If the Canadian Food Inspection Agency (CFIA) or the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) is planning to visit the food premises, consider a joint visit to minimize disruption to the food premises' operation. A joint visit with various food safety partners also provides an opportunity for collaboration and to avoid unnecessary duplication. Consider a pre-meeting/discussion to ensure that the roles and responsibilities of each party are clear and well defined.

The food items of interest and the time period of interest will depend on the available epidemiologic, clinical and food safety information. Discuss or review with the applicable OICC/ON-OICC partners the following:

- Specific hypotheses being considered (i.e., food items of interest)
- Food items consumed by outbreak cases from this food premises. If unclear, please review exposure data of outbreak cases and also review the menu and attempt to identify the dishes and/or the ingredients.
- Specific areas to explore and make observations of during the visit (e.g., specific food prep area, storage area)
- Product sampling requirements (for both items produced on-site and items brought in/purchased), including if samples are to be collected in part, whole, raw, final product or a combination.
- Specific questions to ask the operator or food handlers
- Other outbreak-related considerations during the visit (e.g., incubation period of the pathogen, date of consumption, and shelf-life of the food item of interest)

PHO may initiate pre-visit calls/meetings to provide specific directions and follow-up.

Contact PHO's Enteric, Zoonotic and Vector-borne Disease (EZVBD) Unit if assistance is needed with coordination to obtain information from OICC/ON-OICC partners.

Information obtained while onsite may also inform specific foods to focus on for sampling and for records retrieval.

During the Site Visit(s)

Collection of staff information including illness and hygiene

Verify if any employees were ill. If so:

- When did they become ill
- What were their symptoms (if the information is available), and if they worked while symptomatic (including servers, as they may do some food handling, like garnishing or plating).

Verify if any employees:

- Worked at multiple locations
- Worked at other food premises (part-time employees may work at other food premises)

Verify the following for any ill food handlers during the relevant time period:

- Did they consume any food from the premises? If so, what foods and when?
- Were they tested for the pathogen of interest?
- Do they have a history of travel outside of Canada?

Identification of opportunities for cross-contamination

Observe and/or inquire

- How food is prepared/handled/packaged/stored. Pay special attention to potential opportunities for improper food handling, cross-contamination, poor sanitation, etc.
- Where excessive bare hand contact with food occurs or if there is improper use of disposable gloves (e.g., reuse of soiled disposable gloves).
- Whether specific food handlers are involved in various food handling tasks, such as raw food preparation and ready-to-eat food preparation.

Where possible, observe any signs of food handling issues or opportunities for cross-contamination. Determine if there is any indication of poor hand hygiene (e.g., inadequate hand washing is observed, hand washing sinks are not used frequently, blocked and inaccessible or not properly re-stocked).

If possible, interview the operator and food handler(s) individually/separately about the following:

- Preparation procedure of dishes of interest from start to finish (e.g., thawing, cooking, cooling, storage, reheating).
- Produce washing and frozen food thawing procedures.
- Use of multi-purpose sinks (i.e., the intended uses and how they are cleaned between different uses).
- Cleaning, sanitizing and storage of cutting boards and food utensils (e.g., knives).
- Cleaning frequency and procedure for clean-in-place food equipment or food contact surfaces, including type and concentration of sanitizer used.

Collection of supplier information for foods of interest

Inquire if food items/dishes of interest are made on-site or at another food premises (e.g., some restaurant chains may have a central prep kitchen that makes certain food items for satellite locations).

If applicable, obtain a list of suppliers for the ingredients for the foods of interest. **Consider completing the Data Collection Table for Food Safety Investigation and Product Traceback for the foods of interest. Refer to [Appendix A](#) for a sample of how it can be filled out.** Sales receipts or invoices for the time period of interest may be required for product traceback purposes.

Take photos and/or obtain electronic copies of invoices for food ingredients used to make foods of interest during the relevant time period.

Additional Information

- If not already stated on the invoices, determine who is the manufacturer/supplier of the ingredients of interest and where are they located (e.g., company name, company address, contact number, and country of origin).
- Inquire if there are alternative ingredient suppliers used during non-routine situations (e.g., some restaurants may source from a local supermarket or secondary supplier when there is an ingredient shortage).
- Confirm that ingredients used are from approved sources (i.e., regulated and/or licensed) and are accurately reflected in records and invoices.
- Determine the frequency at which ingredients are purchased and if they are properly rotated (i.e., first in-first out). Note if any non-routine shipments/purchases occurred during the time period of interest.
- Ask the operator if they noticed anything unusual upon shipment arrival (e.g., frozen foods were thawed, excess soil on fresh produce).

Collection of food samples and management of food information for foods of interest

Food Sample Collection

Refer to the [Public Health Inspection's Guide to Environmental Microbiology Laboratory Testing³](#) for instructions on food collection, including sampling of large and closed lots, representative sampling, and sampling of individual meal components.

- Food samples should represent what the case(s) consumed. Collect the same lot, if possible. If the same production lot is no longer available, control samples can be obtained from the closest available lot.
- If a specific dish is of interest (e.g., salad) has been identified, then collect individual raw ingredients of the suspected dish and the final dish as prepared for consumption.
- In addition, if possible, collect a closed sample of the implicated lot to determine if the product was contaminated prior to handling. If the implicated lot is no longer available, collect the lot that is closest to the date of the implicated lot.

Food Sample Submission

Submit food samples using the [Food Bacteriology Requisition form](#) and record the outbreak/investigation number, if available.

Contact the environmental laboratory through PHO Laboratory Customer Service Centre at 416-235-6556 or toll free 1-877-604-4567 for any additional questions on food testing.

See below for some questions that can be raised from partnering agencies regarding the sample collection:

- How was the food sample collected (i.e., describe the step-by-step sampling procedure used)?
- What steps were taken to ensure the food samples were not cross contaminated during sampling?
- What equipment or utensils were used to collect the food samples (e.g., sterile sampling bags, utensils)?
- Were the food samples transported directly to the laboratory or to another location first?
 - Under what conditions were the food samples transported (e.g., in cooler/box, with freezer packs) and how long did transportation to the other location and/or laboratory?
 - If the food samples were stored prior to transport to the laboratory, how were they stored (e.g., room temperature/refrigerated/frozen) and for how long were the samples stored prior to delivery to the laboratory?

Information Gathering

Refer to [Appendix B \(Examples of Product Information on Commercial Products\)](#) for additional information on collecting product information during food sampling.

Photos of product packaging should be taken, including:

- photos of all sides of the product,
- both outer and inner packaging if applicable.

Photos give CFIA an idea of what the product looks like and the type of packaging it comes in.

Placing Suspect Foods or Ingredients on Hold

If one or more foods have been identified as the highly suspected source of the outbreak, ask the operator to label the food items and place them on hold and ensure they are not used or offered for sale until further notice by public health. The operator can use an alternative brand of the same ingredient.

After the Site Visit(s)

Post-visit communication

- Provide an update on findings to PHO's EZVBD Unit upon completion of the visit/investigation.
- If requested, provide a brief summary of the site visit to partners on the ON-OICC calls.
- Share lab results of food samples submitted for testing.

PHO's EZVBD Unit will facilitate distribution of information, including product details, photos and invoices to OICC/ON-OICC food safety partners for further follow-up, as needed.

Additional Resources

- Health Canada. Weight of evidence: general principles and current applications at Health Canada. Ottawa, ON: Her Majesty the Queen in Right of Canada, represented by the Minister of Health; 2018. Available from: <https://www.canada.ca/content/dam/hc-sc/documents/services/publications/science-research-data/weight-evidence-general-principles-current-applications/weight-evidence-general-principles-current-applications.pdf>
- Centers for Disease Control and Prevention. Environmental assessment training series (EATS) [Internet]. Atlanta, GA: Centers for Disease Control and Prevention; 2023 [cited 2023 Nov 09]. Available at <https://www.cdc.gov/nceh/ehs/elearn/eats/index.html>

Acknowledgement

This reference document was developed with input from the CFIA, MOH, OMAFRA, Association of Supervisors of Public Health Inspectors of Ontario (ASPHIO) and relevant departments at PHO.

References

1. Public Health Agency of Canada. Canada's foodborne illness outbreak response protocol (FIORP) [Internet]. Ottawa, ON: Her Majesty the Queen in Right of Canada, as represented by the Minister of Health; 2017 [modified 2021 Jul 05; cited 2023 Sep 20]. Available from: <https://www.canada.ca/en/public-health/services/publications/health-risks-safety/canadas-foodborne-illness-outbreak-response-protocol-fiorp-guide-multi-jurisdictional-enteric-outbreak-response.html>
2. Ontario. Ministry of Health. Ontario's foodborne illness outbreak response protocol (ON-FIORP) 2020 [Internet]. Toronto, ON: Queen's Printer for Ontario; 2020 [cited 2023 Feb 07]. Available from: https://www.health.gov.on.ca/en/pro/programs/publichealth/enviro/docs/fiorp_protocol.pdf
3. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Public health inspector's guide to environmental microbiology laboratory testing [Internet]. Toronto, ON: Queen's Printer for Ontario; 2021 [cited 2023 Jan 24]. Available from: <https://www.publichealthontario.ca/-/media/documents/lab/phi-guide.pdf?la=en>

Appendix A

This is a sample 2 page version of the Outbreak Investigation Trace Back Form identifying the level of detail required for submission. A fillable Outbreak Trace Back form is available on the [PHO website](#).

Food Safety Investigations and Product Traceback Form



Outbreak Investigation name: Outbreak number:

Name of lead inspector (involved in site visit):

Name all other inspector(s) (involved in site visit): A. B. C.

Premises Details:

Name: Date of visit:

Address: City: Province:

Contact information: Phone: Email:

Note: Contact the environmental laboratory through PHO Laboratory Customer Service Centre at 416-235-6556 or toll free 1-877-604-4567 for any additional questions on food testing.

Product Name:	Food Item 1	Food Item 2	Food Item 3
Product Common Name (type):	<input type="text" value="Tofu (sweet and spicy)"/>	<input type="text" value="Tahini paste"/>	<input type="text" value="Breaded chicken strip (raw)"/>
Product Brand Name:	<input type="text" value="Sun Food"/>	<input type="text" value="Royal Tahini"/>	<input type="text" value="Chicken Drum"/>
Sample Details:			
Sample type:	<input type="text" value="Non-intact (open)"/>	<input type="text" value="Intact (closed)"/>	<input type="text" value="Intact (closed)"/>
Was it the same lot as what the case consumed during their exposure period?:	<input type="text" value="No"/>	<input type="text" value="Yes"/>	<input type="text" value="Unsure"/>
Storage Condition ¹ :	<input type="text" value="Refrigerated"/>	<input type="text" value="Room Temperature"/>	<input type="text" value="Frozen"/>
Date Received from Supplier:	<input type="text" value="September 10, 2023"/>	<input type="text" value="October 15, 2023"/>	<input type="text" value="August 17, 2023"/>
Handling Details:			
On-site processing / handling and preparation:	<input type="text" value="Comes in frozen, thawed in walk-in fridge, sautéed before serving."/>	<input type="text" value="A new container opened as needed and refrigerated after opening. Water, citric acid and salt added to paste to make tahini sauce."/>	<input type="text" value="Taken directly from freezer and deep fried. Served with fries and salad."/>

Additional questions on next page →

Product Details:	Food Item 1	Food Item 2	Food Item 3
Universal Product Code or Price Look-Up Code ² :	832658006667	067200017146	765345600154
Production Code, Lot Code, or Identifying Number:	N/A	PRO: 25/09/23, LOT No. 001	2104 0640A14:48
Best Before Date / Use by date (date as per packaging):	September 20, 2023	10/15/2024	2023 MA 15
Unit Size:	800g	18kg	10lbs bag
Distributor / Supplier's			
Name:	AA Supplier	BB Supplier	CC Supplier
Address:	123 Mills Rd.	111 Mississauga Road	Toronto
City:	Scarborough	Mississauga	
Province / State:	ON	ON	ON
Country:	Canada	Canada	Canada
Producer / Manufacturer's			
Name:	AA Manufacturer	BB Manufacturer	CC Manufacturer
Address:	21 Jump Street	Kolankaya Köyü No: 10 12300	1st Street
City:	Toronto	Istanbul	Springdale
Province / State:	ON		AR
Country:	Canada	Turkey	USA
Other Details ³ :	Receives shipment twice a week.	Receives weekly shipment. Two pails very shipment.	Receives monthly shipments, 20 bags per shipment (invoices available)

1 Example: dry storage, refrigerated or frozen
2 Universal Product Code is usually 12 digits, Price Look-Up Code is usually 4 digits
3 Example: order frequency

©King's Printer for Ontario, 2023



Appendix B: Examples of Product Information on Commercial Products

Specific product details can be found in various locations on the label, packaging or container. Therefore, **please examine the package and label carefully, and when taking photos, ensure photos are taken of every side of the packaging and double check that all codes and words in the photos are legible.** Take close-up photos (multiple photos of each side of the packaging if needed) to clearly capture all of the required information.

Figure 1. Product details are present all around the label



Figure 2. Before before date sampled directly on the can (not on the label)

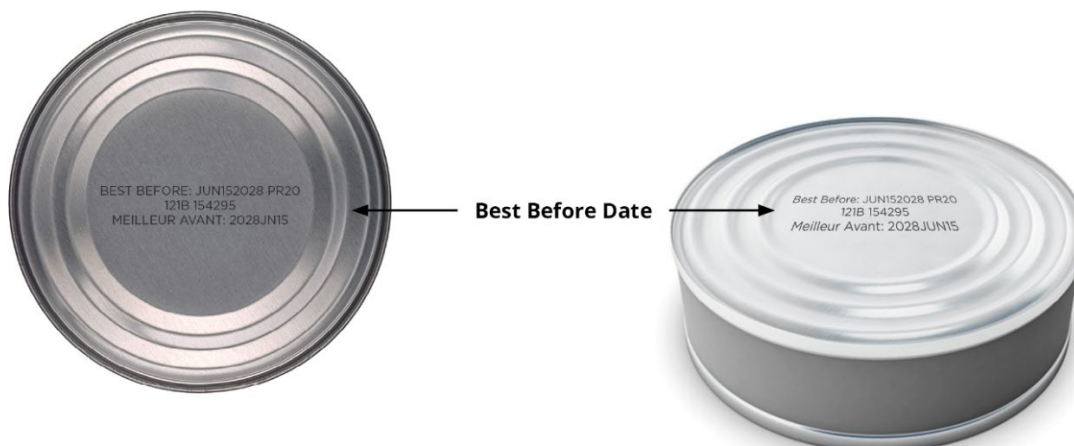


Figure 3. Cereal box and milk carton with product information on various sides of the package

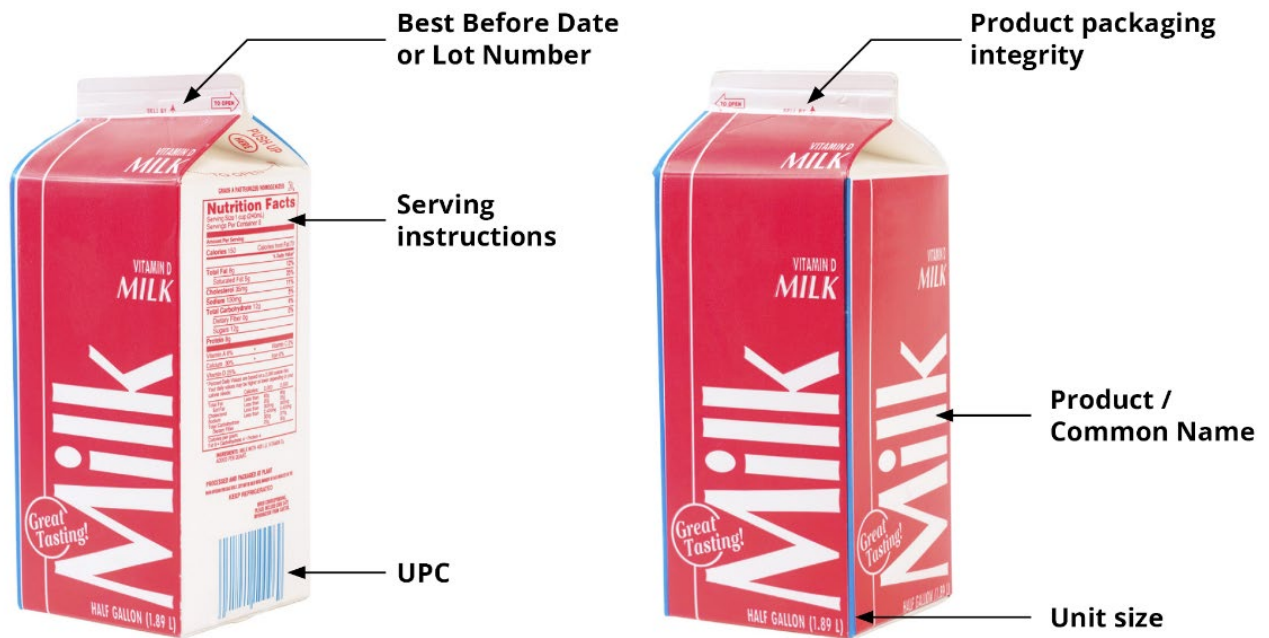


Figure 4. Best before date and establishment number on the bread tag

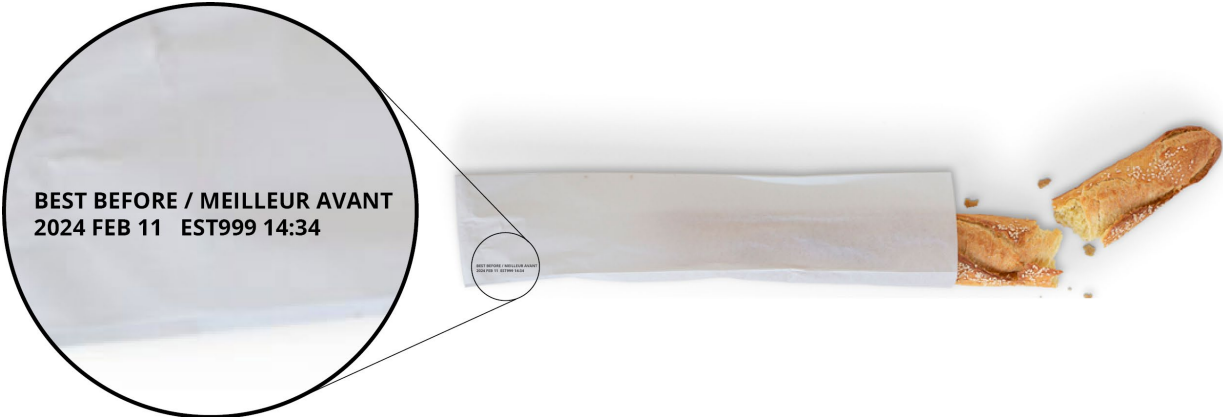


Figure 5. Inner bag/package containing production lot code and establishment number



Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Considerations for food safety investigations at food premises during an outbreak. Toronto, ON: King's Printer for Ontario; 2023

Disclaimer

This document was developed by Public Health Ontario (PHO). PHO provides scientific and technical advice to Ontario's government, public health organizations and health care providers. PHO's work is guided by the current best available evidence at the time of publication. The application and use of this document is the responsibility of the user. PHO assumes no liability resulting from any such application or use. This document may be reproduced without permission for non-commercial purposes only and provided that appropriate credit is given to PHO. No changes and/or modifications may be made to this document without express written permission from PHO.

Public Health Ontario

Public Health Ontario is an agency of the Government of Ontario dedicated to protecting and promoting the health of all Ontarians and reducing inequities in health. Public Health Ontario links public health practitioners, front-line health workers and researchers to the best scientific intelligence and knowledge from around the world.

For more information about PHO, visit publichealthontario.ca.

© King's Printer for Ontario, 2023

Ontario 