

British Columbia Foodborne Illness Outbreak Response Protocol (BC FIORP)

Guide to Multi-Agency Response in British Columbia

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Drafting Committee

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Executive Summary

The investigation of and response to foodborne illness outbreaks in British Columbia may involve responses by several agencies with complementary responsibilities. To maximize the benefits of collaboration and overall effectiveness, cooperating agencies collectively developed this BC Foodborne Illness Outbreak Response Protocol (BC FIORP) as a documentation of their agreements and understanding.

The BC FIORP adopts many of the principles and core concepts presented in the national template for multi-jurisdictional coordination in foodborne illness response prepared by Health Canada.

A central element of the BC FIORP is the recognition that a Coordinating Committee, with representation from agencies active in a specific outbreak, may be established as needed to coordinate a multi-agency response to a foodborne illness outbreak within BC.

Overall, the intent of the Coordinating Committee is to encourage collaborative information-sharing and coordinated outbreak response, without unduly restricting or constraining participating agencies. Points of collaboration recognized in this document include:

1. Notifications
2. Investigations
3. Integrated Analysis
4. Industry Contact
5. Mitigation Actions
6. Public and Stakeholder Communication
7. Outbreak Conclusion
8. Debrief

Forward

The BC FIORP is a voluntary arrangement to enhance public health and safety through effective and efficient risk mitigation programs aimed at foodborne illness outbreaks in BC.

All cooperating agencies understand and acknowledge that the BC FIORP has no legal force or effect, and that, notwithstanding the definitions included, the terminology used herein shall generally be construed by its informal, colloquial meaning. The BC FIORP does not interfere with any agency's ability to meet its legislated mandate, or bind or limit its operations.

It is recognized and agreed that neither Canada nor the Province of British Columbia by reason of having entered into the BC FIORP have surrendered, abandoned, or delegated to the other party any of its powers, rights, privileges, or authorities vested in it under the provisions of the Constitution Acts 1867 to 1982, and any amendments thereto or otherwise, or to have impaired any of those powers, rights, privileges or authorities.

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Acronyms

ARC	Area Recall Coordinator (CFIA)
BC	British Columbia
BCCDC	British Columbia Centre for Disease Control
BC FIORP	British Columbia Foodborne Illness Outbreak Response Protocol
CC	Coordinating Committee
CFIA	Canadian Food Inspection Agency
HA	Health Authority(ies) (BC)
HC	Health Canada
MAg	Ministry of Agriculture (BC)
MHO	Medical Health Officer (BC)
MOH	BC Ministry of Health
MRA	Most Responsible Agency
NML	National Microbiology Laboratory
PHO	Provincial Health Officer
PHAC	Public Health Agency of Canada
RCMP	Royal Canadian Mounted Police
RRC	Regional Recall Coordinator (CFIA)

Definitions of Terms

The following definitions are provided to ensure a common understanding of the terms used in this document.

“Commercial food” means any article manufactured, sold or represented for use as food or drink intended for human consumption in British Columbia and any ingredient that may be mixed with food for any purpose whatever. This includes food prepared and served by a single location foodservice operation e.g., restaurant or institution.

“Confidential information” means information marked as confidential by the party providing it and treated consistently in a confidential manner by that party.

“Epidemiological evidence” means the demonstration of an association between a food and human illness through an increase in cases in a population, place or timeframe with exposure to the same food product or a statistically significant association between illness and food.

“Epidemiological outbreak investigation” means an investigation made to determine the existence of an outbreak, to characterize it as to time, space and personal characteristics, to develop and test a hypothesis explaining the specific exposure that caused disease. The investigation may result in recommendations towards the implementation of appropriate prevention and mitigation measures.

“Evidence” means that which demonstrates or shows an association between events. Evidence of an association between a consumed food and human illness may be epidemiological and/or based on the results of food safety investigations or laboratory analysis.

“Food” means any raw, cooked or processed substance, including (but not limited to) ice, beverage or ingredients used or intended for use, in whole or in part, for human consumption. For the purpose of the BC FIORP, it excludes non-bottled water. However, it does include food made with non-bottled water.

“Foodborne illness” means a human illness caused by a microbiological, chemical, or inert physical hazard, with evidence indicating a food was the common source of exposure to the contaminant causing the illness.

“Food safety investigation” means any inspection and related activities undertaken by regulatory officials to verify whether or not a food hazard which could cause foodborne illness exists and to determine the nature and extent of the problem. In the case of a foodborne illness outbreak, information gathered during the food safety investigation and epidemiological investigation provides the basis for risk assessment and for the development of appropriate risk management strategies to control affected food products.

“Hazard” means a biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect.

“Laboratory evidence” means evidence shown by the isolation/identification of the same pathogen, toxin or contaminant from cases of human illness and the suspect food or its presence in the food associated with clinical illness in exposed humans.

“Most Responsible Agency” is the agency deemed to have the primary responsibility for the investigation and response to a foodborne illness outbreak in BC based on its mandate.

“Outbreak” means an increase in the rate of illness above expected levels, or a group of people experiencing similar illness after a common exposure. An outbreak is identified through laboratory surveillance or an increase in illness that is unusual in terms of time and/or place. An outbreak is confirmed through laboratory and/or epidemiological evidence. This definition is limited to short and mid-term duration outbreaks and excludes those that have caused chronic disease problems over several years or decades.

“Personal information” means information about an identifiable individual that is recorded in any form including the meaning ascribed to the term in the *Privacy Act* and the *Freedom of Information and Protection of Privacy Act*.

“Product” means any article that is or may be the subject of trade or commerce.

“Response” means activities related to the determination, investigation, mitigation and containment of foodborne illness outbreaks, as well as related communication activities.

“Summary of Discussion” means a written summary in point-form of Coordinating Committee meetings, including the identification of agencies involved, update of the situation, issues raised, and action items following from the discussion.

BC Foodborne Illness Outbreak Response Protocol (BC FIORP)

Guide to Multi-Agency Response in British Columbia

1.0 Overview

1.1 Background

The routine surveillance of foodborne illness by Health Authorities (HA) in British Columbia (BC) involves HA follow-up of cases of reportable enteric diseases and the collection and analysis of individual-level data, as well as data related to clusters of cases of enteric illness reported by the public, physicians and health care facilities. The BC Centre for Disease Control (BCCDC) conducts surveillance of foodborne illness at a provincial level and the Canadian Food Inspection Agency (CFIA) investigates foodborne illness complaints with respect to food safety.

Foodborne illness outbreaks in BC may result from natural, accidental, intentional, or malicious contamination, and can lead to cases of human illness that cross HA boundaries.

The response to a cluster of enteric disease cases may include environmental/food safety and epidemiologic investigations, supported by enhanced laboratory testing. When this process provides evidence that a potential foodborne illness outbreak may affect cases in multiple HA or may be caused by a widely distributed food product or by a food regulated under the Food and Drugs Act where the CFIA must participate in the response, a multi-agency response is required.

Public agencies responsible for human health and food safety respond to these events through the development of enhanced foodborne illness surveillance, and by collaborating in a multi-agency outbreak investigation and mitigation. Several agencies may be involved, depending on the situation, and each has complementary responsibilities in the protection and promotion of the health of British Columbians.

All agencies agree that efficiency and effectiveness may be maximized through enhanced communication and other methods of collaboration among the agencies.

In 2004, the Federal/Provincial/Territorial Committee on Food Safety Policy published the Canada Foodborne Illness Outbreak Response Protocol (FIORP) to Guide a Multi-jurisdictional Response. The Canada FIORP guides cooperation among government levels during potential or confirmed foodborne illness

outbreaks that may involve more than one province or territory or have international implications. The BC FIORP adapts and enhances the Health Canada template to address the unique requirements and specific circumstances of multi-agency coordination in BC.

1.2 Purpose

The BC FIORP is designed to be used in response to a local or provincial foodborne illness outbreak with a suspect or confirmed link to food consumed in BC when multiple agencies are, or need to be, involved in the investigation and response. The BC FIORP describes the points of collaboration available to health agencies active in BC, beginning with notification of a potential foodborne illness outbreak and ending with the conclusion of the outbreak and an opportunity to share lessons learned.

The BC FIORP is not intended for use in all foodborne illness outbreak investigations in BC; most are identified and managed by HA.

1.3 Activation

When any agency involved in an outbreak response feels there is a need to hold a meeting to update partner agencies and/or share or obtain information, the agencies involved in the meeting should discuss whether to formally activate BC FIORP. A decision will be made by consensus. If consensus cannot be reached, a decision will be made by the majority of agencies among those present.

If the BC FIORP is activated, this will be stated in the meeting summary/minutes circulated to at least one senior member of all involved/affected agencies by the Most Responsible Agency or designate (section 1.5 and Annex C).

Activation should occur as early as possible and could occur before the link is established with a specific food item.

1.4 Scope

The BC FIORP is intended to be followed during the response to suspected or confirmed outbreaks of illnesses linked to foods consumed in BC when multiple agencies participate in the response. The BC FIORP does not address the broader risk assessment process that contributes to policy and standard setting, such as the coordination needed to reduce risks of future occurrences.

Evidence to potentially link a food to an outbreak includes:

- A higher than expected number of cases has consumed the same food item
- A number of cases have consumed a food that traces back to the same source

- A specific food item has caused outbreaks of the etiological agent in the past, either in the same jurisdiction or in other jurisdictions, and a reasonable number of current outbreak cases indicate that they have been exposed to it
- A breakdown in the hazard analysis and critical control points (HACCP) process for the implicated food is known to have occurred, the food is distributed in the area(s) affected by the outbreak and is known to be a potential source of the outbreak etiological agent
- The etiological agent that has caused cases has been isolated from the food
- An epidemiological investigation has found a statistically significant association of disease with a specific food item

This type of evidence may not be available initially. The MRA will have to assess whether it is possible that an outbreak is linked to food based on the information available.

While the preceding evidence is sufficient to initiate the BC FIORP, it is not necessarily sufficient to implicate a food product. Additional epidemiological, laboratory and environmental data must be collected during the investigation in order to demonstrate a causal association between the outbreak and an implicated food.

This BC FIORP anticipates the coordination of multi-agency response activities related to illness outbreaks in BC. Such situations may include a single HA that has requested assistance from the BCCDC or one or several BC agencies collaborating with the CFIA.

The BC FIORP does not apply when a single HA is involved in the investigation, such as when all cases reside in that HA and when the food is manufactured within the HA and not in a provincially licensed or federally registered facility or exported across provincial boundaries.

The BC FIORP acknowledges that when the coordination of cross-provincial and territorial/US boundary response is needed, the contaminated food originates outside BC, or public health information and actions are required both within and outside the province, actions taken should be in accordance with the Canada FIORP.

The scope addresses potential foodborne illness outbreaks resulting from the natural, accidental, intentional, or malicious contamination of foods by microbiological, chemical, inert physical hazards, and other similar substances when multiple agencies participate in the response. In case of an intentional or malicious contamination, law enforcement agencies will be involved in the investigation and actions will be taken in accordance with provincial and national emergency response protocols.

1.5 Guiding Principles

1) *Protect the Health of British Columbians*

The primary objective of the activities described in this BC FIORP is to mitigate or contain the effects of a foodborne illness outbreak in a timely and effective fashion, thereby protecting the health of British Columbians.

2) *Exchange Information*

The agencies cooperating in public health protection under this BC FIORP will, subject to their respective privacy and access-to-information legislation and any information-sharing agreements, exchange information relevant to the investigation and control of a foodborne illness outbreak in a timely fashion. Annex A sets out a framework for sharing information during an outbreak.

3) *Respect Confidentiality*

Confidentiality of food product information will be governed by current legislation that applies to the information and the agencies involved. However, public disclosure of food product information may be required once a reasonable link to a food source has been identified.

4) *Identify Link between Illness and Food Item*

Laboratory, epidemiological or food safety investigation evidence is accepted for establishing the association between a particular food or foods and human illness.

5) *Provide Assistance to Others*

The partners implementing the BC FIORP may provide assistance to each other as requested or as needed during an investigation. Such assistance may be limited by legislated mandate and resource availability. Annex B identifies the roles and responsibilities for outbreak response for the various agencies.

6) *Respect MOUs with Others*

The agencies will share and respect memoranda of understanding (MOUs) or other agreements between the agencies regarding food safety, investigation, control measures, or privacy. The BC FIORP is intended to complement agreements and procedures established in individual agencies with roles in foodborne illness response. When an outbreak is multi-provincial or territorial, the Canada FIORP should be followed.

The BC FIORP is not intended to substitute for the on-going relationships among the agencies necessary to discharge other responsibilities or to manage issues as they arise.

7) *The Most Responsible Agency (MRA) will coordinate the outbreak response*

The MRA is the agency deemed to have the primary responsibility for coordinating the investigation and response to a foodborne illness outbreak based on its jurisdictional mandate.

- When the outbreak affects a single HA, that HA is the MRA. The Medical Health Officer (MHO) or designate will initiate and coordinate a response to the outbreak. Should cases occur in more than one HA, but there is evidence to suggest that the source is within one HA or a large majority of cases are in one HA, then the primary HA will continue to be the MRA. This may involve the formation of an Outbreak Response Working Group. An MHO can request that BCCDC assist in the investigation or take the role of the MRA if needed.
- If cases occur in more than one HA, no single HA has the majority of cases and the source is unknown, or apparently broadly distributed, BCCDC will be the MRA.
- In certain circumstances, other agencies such as the CFIA may be the MRA, e.g. a contaminated food product is identified but no or few cases of illness are associated.

During the course of an investigation, the information gathered may show that cases and/or the implicated food are distributed differently than what was initially thought, e.g. cases may be widely distributed in the province but through the investigation, the source is localised to one HA or, cases initially thought to be localised to one HA are later identified to be widely spread throughout BC. The MRA may need to change before or after activation of the FIORP according to the above-mentioned mandates.

The identification of the MRA and the need for MRA transition will be discussed at every Coordinating Committee meeting (see section 2.0). A decision to identify the MRA will be made by consensus. If consensus cannot be reached, a decision will be made by the majority of agencies among those present.

Once a MRA is identified, this agency takes on all coordinating roles (see Annex C). If the MRA needs assistance, it can ask another agency to fulfill one or several required roles.

The MRA takes all Coordinating Committee members' needs into account. The MRA plays a coordinating role and in no way controls or directs other agencies.

1.6 Responsibility for BC FIORP Updates

The BCCDC will be responsible for coordinating updated versions of the BC FIORP, including receiving comments, striking a Drafting Committee that represents active agencies, and coordinating BC FIORP review by affected stakeholders on an as-needed basis.

2.0 Coordinating Committee

A Coordinating Committee represents an *ad hoc* collection of agency representatives, with membership determined at the time of need and according to the nature of the outbreak and response requirements.

The Coordinating Committee provides a forum for sharing and reviewing information and for coordinating activities. It recognises that each member organisation has its own mandate which must be respected.

The Coordinating Committee helps each member agency meet its mandate during an outbreak investigation and response. It serves as an avenue of information exchange, and a way to confirm the activities of the respective agencies. The Coordinating Committee provides a means of avoiding duplication of effort, and sharing resources when needed. For example, members of the Committee may agree on which agencies should collect and organize outbreak status and situation information.

Most importantly, the Coordinating Committee provides a forum to review and discuss matters of mutual interest, including ways to speed resolution of the threat at hand and to enhance public health in BC.

2.1 Objectives

Upon activation, the initial purpose of the Coordinating Committee will be communication of information relevant to the outbreak and formulation and revision of investigation and response strategies to mitigate the impact of the outbreak.

If further action is necessary, the Coordinating Committee could satisfy any or all of the following objectives:

- To facilitate internal communications among participating agencies
- To clarify roles and responsibilities specific to the incident at hand
- To serve as a central point for representatives of involved agencies to collect, analyze, and share information from a variety of sources
- To communicate outbreak response strategies, such as follow-up and corrective actions
- To identify resource needs and opportunities for sharing resources
- To establish priorities for response where critical resources are limited or constrained
- To gain consensus in resolving issues that emerge
- To harmonize external communications and to ensure the release of consistent and complementary messages to the public and other stakeholders

While the Coordinating Committee strives to reach consensus in guiding response actions, members of the Coordinating Committee recognize that each agency has unique legal responsibilities and mandates that must be respected. Any decision made by an individual agency within its mandate relating to the purpose of the Coordinating Committee should be communicated to all members.

2.2 Initiation

Any agency involved, or with potential need to be involved in an investigation, may request an initial meeting of the Coordinating Committee.

2.3 Committee Chairperson and Membership

The initial meeting can be chaired by any involved agency but will often be chaired by the agency most likely to be the MRA. At the initial meeting, the MRA will be determined (see section 1.5) and the MRA will be confirmed at every subsequent meeting. The MRA is usually responsible for chairing the Coordinating Committee unless delegated to another agency.

Coordinating Committee membership is comprised of agency representatives authorized to act on behalf of their respective agencies. Each agency is free to determine its level of involvement in the Coordinating Committee, and to adjust its involvement over time.

The composition of the Coordinating Committee will depend on the nature of the outbreak, and it may evolve as knowledge related to the source of the outbreak is generated during the outbreak. Members may include:

- Health Authorities in BC
- BC Centre for Disease Control (BCCDC)
- BCCDC Public Health and Microbiology Reference Laboratory
- Canadian Food Inspection Agency
- Ministry of Health and/or Provincial Health Officer
- Other agencies such as the BC Ministry of Agriculture, the Public Health Agency of Canada, emergency response agencies, Health Canada and the RCMP may contribute in some outbreak investigations

Responsibilities of the chairperson include arranging meetings, setting out agenda, and ensuring time-effectiveness. The chairperson will ensure all meetings are recorded in a summary of discussion, and distribute each summary to agencies involved in the outbreak response. All summaries of discussion will be retained by the chairperson as part of the documentation package for the response effort.

Committee members are responsible for coming to each meeting prepared to speak to the issues at hand.

In case of an intentional or malicious event, law enforcement authorities will lead the forensic investigation. The Coordinating Committee will share information with them through the provincial emergency response structure.

2.4 Meetings

Most multi-agency coordination during an outbreak will occur by telephone conference call, fax and email. However, there may be a need to meet in person in some events.

The Coordinating Committee will determine the need for meetings, guided by the type of outbreak, the status of investigation and response, and the advice of participating agencies.

During meetings, the chairperson will guide the discussion using an agenda and timeline agreed on by participants (refer to sample agenda in Annex D).

2.5 Decision-making and Resolving Differences of Opinion

The purpose of the Coordinating Committee is to effectively respond to foodborne illness outbreaks by coordinating a unified response to the health risk. This requires the Committee to make consensus-based decisions to determine coordination strategies. While the Coordinating Committee will strive to reach consensus in guiding response actions, members of the Coordinating Committee recognize that each agency has unique legal responsibilities and mandates that must be respected.

The Coordinating Committee will attempt to resolve all differences of opinion, respecting the legal responsibilities and mandates of each agency, during the course of an outbreak. However, when consensus cannot be reached, members of the Coordinating Committee should seek assistance from senior officials in their respective agencies. Any decision made by senior officials in resolving the issue should be communicated to all Coordinating Committee members.

3.0 Points of Collaboration

As a guide to cooperation among agencies responding to foodborne illness outbreaks in BC, the BC FIORP identifies several opportunities for working together.

Figure 1 illustrates the response categories and points of collaboration available in response. Each category is described further in the following sub-sections.

Response categories and points of collaboration may vary, depending on the circumstances of each outbreak.

Figure 1. Overview of Response Categories and Points of Collaboration*

Activity Description	Response Categories	Points of Collaboration
<ul style="list-style-type: none"> • Relevant agencies are alerted to potential outbreak. • Each agency manages internal notifications. 	<p style="text-align: center;">Notifications</p>	<ul style="list-style-type: none"> • Notify members of Coordinating Committee and request their participation. • Schedule initial meeting.
<ul style="list-style-type: none"> • Epidemiological investigations identify cases and the potential source of illness. • Food safety investigations identify products responsible for the outbreak. • Laboratory analyses support epidemiological and food safety investigations. 	<p style="text-align: center;">Investigations - Epidemiological - Food Safety - Laboratory</p>	<ul style="list-style-type: none"> • Coordinate info required and agency best able to collect it. • Standardize and centralize information and share results. • Share laboratory services and resources to assist partners. • Exchange results of laboratory analyses.
<ul style="list-style-type: none"> • Analyse and interpret all information gathered. • Hypothesize the cause / source of the outbreak. • Identify and prioritise information gaps. 	<p style="text-align: center;">Integrated Analysis</p>	<ul style="list-style-type: none"> • Coordinate joint analysis and interpretation of results.
<ul style="list-style-type: none"> • Implicated companies help with investigations and are kept informed of response. 	<p style="text-align: center;">Industry Contact</p>	<ul style="list-style-type: none"> • Coordinate communication with industry members. • Share product information received from industry according to legislation and agreements.
<ul style="list-style-type: none"> • Actions may include public notification, recall, disposal, detaining a product, controlling sales, disposal, and other response. 	<p style="text-align: center;">Mitigation Actions</p>	<ul style="list-style-type: none"> • Coordinate response actions and timing of mitigation.
<ul style="list-style-type: none"> • Potential consumers of food products are informed of risks and measures to protect themselves. 	<p style="text-align: center;">Public and Stakeholder Information</p>	<ul style="list-style-type: none"> • Share communication messages and plans. • Coordinate timing of releases, where possible.
<ul style="list-style-type: none"> • MRA declares conclusion of outbreak, all demobilize resources, and inform stakeholders. • MRA prepares an Outbreak Report. 	<p style="text-align: center;">Outbreak Conclusion</p>	<ul style="list-style-type: none"> • Determine conclusion, communicate to all agencies. • Circulate Outbreak Report.
<ul style="list-style-type: none"> • Agencies discuss lessons and identify improvements. • Each agency may prepare an After Action Report. 	<p style="text-align: center;">Debrief</p>	<ul style="list-style-type: none"> • Hold a joint debriefing session if necessary to identify recommendations for improvement.

*These response categories may occur in a different order or simultaneously.

3.1 Notifications

Notification refers to the initial contact of agencies that have a mandate to be involved in the investigation and response to an outbreak. BCCDC maintains a BC FIORP contact list that identifies the means of contacting each agency/agency representative that may be involved in foodborne illness outbreak response in BC. Each agency is expected to manage all appropriate internal notifications.

A notification will occur when any agency with the mandate to investigate or respond to an outbreak becomes aware of a potential for a foodborne illness outbreak and notifies the MRA which in turn may notify others.

If a foodborne outbreak is determined to involve jurisdictions outside BC, the Public Health Agency of Canada (PHAC) will be notified and the investigation and response will be conducted according to the national FIORP.

3.2 Investigations

Epidemiological Investigation

Collaboration during epidemiological investigations calls for the Coordinating Committee to help determine the information that is required, to identify the agency best able to gather the information, and to collectively note any information gaps.

Every effort should be made to standardize the information being collected. Data analysis should occur within each agency. When multiple agencies are involved, overall collation and analysis of data by the MRA are also necessary to draw conclusions based on all data available. Results of the epidemiological investigation may be shared with Coordinating Committee members.

Food Safety Investigation

When a food is suspected as the source of an outbreak, a food safety investigation will be conducted to identify the food (s) that may be responsible.

When a food product is produced under BC authority, the HA with jurisdiction will generally conduct the food safety investigation. Other agencies may be requested to assist. If a food product is imported into Canada, shipped inter-provincially, or manufactured in an establishment registered or licensed by the CFIA, the CFIA will conduct or coordinate the investigation.

The CFIA is responsible for the enforcement of the Food and Drugs Act, as it relates to trace-back of implicated product. The Committee members will ensure that all pertinent information regarding an implicated product is forwarded to the appropriate agency(s).

Where trace-back or trace-forward involves other provinces or countries, discussions should refer to recall protocols in existing Food Recall agreements. Effectiveness checks of recalled products are the responsibility of the CFIA, which may request assistance from the HA and/or provincial agencies, when required. The request may be managed through the Coordinating Committee.

Laboratory Investigation

Both epidemiological and food safety investigations may involve laboratory testing. Each investigating agency is responsible for conducting appropriate laboratory analyses as part of their investigation and mandate. Laboratories available to support outbreak investigations in BC include the following:

- Provincial Health Service Authority (PHSA) Laboratories, BCCDC - Public Health & Microbiology Reference Laboratory
- Canadian Food Inspection Agency Laboratory
- BC Ministry of Agriculture Laboratory
- Health Canada Laboratories
- Public Health Agency of Canada, National Microbiology Laboratory
- Private and Hospital Laboratories

If the investigating agency does not have the capacity or expertise to test for the suspect agent, it can ask the Coordinating Committee to identify support laboratories with the required expertise and appropriate equipment.

Laboratory investigations should be coordinated through the Coordinating Committee to avoid gaps, prevent duplication, ensure standard methods, and share results.

Criminal Investigation

If intentional or malicious contamination is suspected, law enforcement agencies with jurisdiction in the affected region should be informed immediately and will lead the forensic investigation (see Annex B).

3.3 Integrated Analysis

Findings from the epidemiological, laboratory and food investigations are shared with the members of the Coordinating Committee. The members or the MRA integrate the findings and use them to generate unifying hypotheses as to the cause and source of the outbreak. They may also use the integrated findings to identify and prioritise gaps in required information, and identify action items for further investigation.

Depending on the demands of the situation, the Coordinating Committee may identify an individual or agency to coordinate the analysis and to bring together all relevant findings to support an effective evaluation.

3.4 Industry Contact

During an investigation, all implicated companies should be kept informed to the extent possible of developments.

For producers and processors operating under BC jurisdiction, the HA with jurisdiction would be the prime industry contact, with the BCCDC taking the lead with the dairy and meat industries. Assistance can be provided by CFIA. The CFIA is the prime contact with processors and importers operating under federal jurisdiction.

The responsible inspection authority should share product information received from industry with other investigating agencies through the Coordinating Committee, as appropriate. The exchange of information among government agencies will be done according to applicable provincial and/or federal legislation pertaining to access to information and privacy, and within the bounds of existing information-sharing agreements (refer to Annex A).

Some outbreaks may require communication with industry representatives beyond the facility implicated. The Coordinating Committee should identify those who require communication and the lead communicator in each instance, according to the member agencies' mandate and jurisdiction.

3.5 Mitigation Actions

Mitigation actions undertaken during a foodborne disease outbreak may include a wide range of activities by one or more response agencies. Examples include the recall of a commercial food, detaining a product, disposing of contaminated or suspected foods, and raising awareness through public education. In some situations, doing nothing may be the appropriate option.

Each agency conducts the necessary mitigation actions under its mandate. The Coordinating Committee coordinates information sharing related to mitigation actions, as needed, including the timing of actions by multiple stakeholders. Responsibility for recall activities of a food may be shared among HA, BCCDC, and CFIA officials, or may be independently carried out according to established protocols.

If the Coordinating Committee suspects that an outbreak may be related to tampering or terrorism, it shall immediately notify the law enforcement agency with jurisdiction. The investigation will continue to be carried out in collaboration with appropriate law enforcement authorities.

3.6 Public and Stakeholder Communication

Public and stakeholder communication may be vital to the interests of public health. Through the collaborative efforts of the Coordinating Committee, potential consumers of food products in the province may be informed of the risks and the measures they may take to protect themselves. This should occur in as timely manner as is necessary to warn the public and stakeholders of a potential risk.

Each agency and level of government has responsibility for public communication activities within its jurisdiction. Members of the Coordinating Committee may prepare and release summary information to the news media and participating agencies.

Due to the dynamics of outbreaks, however, it is essential that members of the Coordinating Committee have the opportunity to ensure messages are as consistent as possible. Any media releases by partners should be shared in advance with Coordinating Committee core members, when practicable, to harmonize public messages.

The Coordinating Committee may:

- Discuss summary information that should be released concurrently through member agencies, with the news media, and by way of other governmental entities.
- Provide clarification for agency spokespersons to ensure all statements to the public are accurate and integrated.
- Assist in scheduling media conferences and briefings, and assist in preparing targeted public messages.
- Suggest that communication personnel and information officers among the member agencies jointly develop and exchange public information messages and delivery mechanisms.

3.7 Outbreak Conclusion

The Coordinating Committee should evaluate all available evidence describing the progression of the outbreak in order to determine when response efforts can be concluded. Ongoing cases may need to be investigated for a period of time to determine if they can be attributed to a particular source enabling appropriate mitigation actions.

After reviewing the status of the foodborne illness outbreak, the MRA, in consultation with the Coordinating Committee, will declare the outbreak investigation closed at the appropriate time. Participating agencies may then demobilize resources, and should collectively inform stakeholders of the conclusion of the outbreak.

The MRA, with the assistance of agencies represented on the Coordinating Committee, may prepare and circulate an “Outbreak Summary” that chronicles key events and findings from the outbreak investigation.

3.8 Debrief

Following an outbreak, the Coordinating Committee may hold a joint “debrief session” to share lessons learned and suggestions for improvement. The MRA, with the assistance of the agencies from the Coordinating Committee will prepare a written summary of facts and lessons learned identified during the debrief process.

In addition, each agency may prepare an “After Action Report” for major events. An After Action Report is a written summary of lessons learned by an individual agency and actions required to improve preparedness and future response coordination as well as to prevent the recurrence of a similar outbreak.

4.0 References

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Annex A – Sharing Information

All data is shared under the “Memorandum of Understanding to Facilitate the Sharing of Information for the Purpose of Investigating and Controlling a Confirmed or Suspected Foodborne Illness Outbreak in British Columbia”.

During response to a foodborne illness outbreak, health agencies with core responsibilities expect to collaborate in a wide range of activities that require information. Whether tracing the source of an outbreak, undertaking investigations, or coordinating mitigation actions, the agencies recognize that effectiveness may be enhanced at times by exchanging information in the possession of each agency.

The information sought for exchange may differ from one event to another, but may include proprietary business information, such as export certificates, and personal patient information that identifies an individual. Such information has a high expectation of privacy and is, therefore, subject to protections offered under both federal and provincial legislation.

Protection of information at the federal level is offered through Canada’s *Privacy Act* (R.S., 1985, c. P-21). This Act does however allow for disclosure of personal information in restricted circumstances. Section 8(2)(f) of the Act provides that Personal Information may be disclosed under an arrangement between the Government of Canada and the government of a province, or any institution thereof, for the purpose of administering or enforcing any law or carrying out a lawful investigation.

BC provincial legislation also protects the rights of individuals to private personal information, but also allows for disclosure in restricted circumstances. Section 33(2)(a) of the *Freedom of Information and Protection of Privacy Act* (R.S.B.C. 1996, c. 165) authorizes public bodies to disclose personal information for the purpose for which it was obtained or compiled or for a use consistent with that purpose.

During foodborne illness outbreaks, the health agencies consider the exchange of information to be essential in protecting the public from additional exposure to illness-related hazards, including food. With this overriding public objective of health and safety in mind, the agencies agree that exchanging information for the purposes of controlling foodborne illness risks during an outbreak is an acceptable practice and have set out the parameters for information sharing in the Memorandum of Understanding.

Annex B – Roles and Responsibilities of Agencies

Responsibilities for responding to foodborne illness outbreaks may be shared among local, regional, provincial, and federal jurisdictions, depending on the situation at hand. The response to such situations involves collaboration and cooperation among all agencies involved. This Annex describes the roles and legislative responsibilities of each agency.

BC Regional Health Authorities (HA)

The first contact for outbreaks within a geographic region usually involves one of more of BC's five regional HA. HA have the mandate to prevent, investigate and respond to human illness outbreaks that occur within their respective boundaries. An outbreak is considered to be within a regional HA's boundaries if all or the majority of cases reside in the HA, or the source of the outbreak is within that regional HA. If the source of the outbreak is a food originating from a provincially or federally registered plant/processor, other agencies also have a mandate to respond. During their investigations, the HA may take steps to control potential causes of foodborne illness.

Agency	Legislation	Regulations, Policies, MOUs	Activity Type	Establishment Type/Scope
Health Authority (MHO or designate)	<ul style="list-style-type: none"> • Public Health Act • Food Safety Act • Fish Inspection Act • Drinking Water Protection Act 	<ul style="list-style-type: none"> • Food Premises Regulation • Fish Inspection Regulations • Drinking Water Protection Regulation • Communicable Disease Regulation • Meat Inspection Regulation • Sanitary Regulations 	Foodborne illness investigations, food safety investigations	All food premises, excluding federally registered establishments and those listed under Food Protection Services, BCCDC

BC Centre for Disease Control (BCCDC)

The PHO has delegated authority to the BCCDC which has been delineated in the "Memorandum of Understanding between the Office of the Provincial Health Officer and the Ministry of Health and the BC Centre for Disease Control, PHSA" including accessing and receiving information and reports about communicable diseases and health threats and coordinating and/or supporting cross-regional outbreak planning and response.

Coordination of multi-jurisdiction BC outbreaks is the responsibility of Communicable Disease Prevention and Control Services (CDPACS), BCCDC. CDPACS also conduct the surveillance of foodborne illnesses at the provincial level and may provide epidemiological assistance to HA at their request.

The BCCDC Environmental Health Services contribute to investigations through their food safety investigation and recall activities, as well as their regulatory compliance and enforcement activities. The BCCDC, at the request of an MHO, may provide consultation to HA even when suspected or confirmed cases are confined within a single regional jurisdiction.

BCCDC officials may also, in some cases, request the assistance of Health Canada, the Public Health Agency of Canada, or the Canadian Food Inspection Agency in the response to a potential foodborne illness outbreak.

Agency	Legislation	Regulations, Policies, MOUs	Activity Type	Establishment Type/Scope
Communicable Disease Prevention and Control Services, BCCDC	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • MOU between PHO, MOH and BCCDC 	Epidemiological surveillance, coordination, investigation, reporting. Coordination with PHAC and provinces for inter-provincial outbreaks	Foodborne, infectious disease outbreaks
Environmental Health Services, BCCDC	<ul style="list-style-type: none"> • Food Safety Act • Milk Industry Act 	<ul style="list-style-type: none"> • Meat Inspection and Dairy Processing Plant Regulations • Milk Industry Standards Regulation (processing plants) 	Food Safety investigations at dairy processing plants and abattoirs for which BCCDC issues licenses Coordination of provincial response to recalls and multiple jurisdiction outbreaks	Provincially licensed abattoirs and dairy processing plants

BCCDC Public Health and Microbiology Reference Laboratory

BCCDC Laboratory Services provide reference diagnostic services to HA and other health agencies in BC. They conduct reference testing of human specimens, help identify clusters of cases based on microbiological characteristics and conduct testing of foods implicated in foodborne illness outbreaks. They also provide laboratory testing of foods implicated in outbreaks.

BC Ministry of Health

The Ministry is responsible for BC's health system, with a mandate to guide and enhance the province's health services, including food protection services. The Ministry provides leadership, direction, funding and support to their service delivery partners, such as HA, health professionals, and others who directly deliver health services. The Ministry continuously monitors and evaluates the delivery of health services and the health of the population.

The Ministry is also responsible for

- Consultation with agencies on environmental health issues, including food safety issues
- Developing inter-government and inter-agency protocols and agreements for environmental health issues
- Data management for environmental health issues
- Development and coordination of promotional and educational materials for environmental health issues

Health Protection Branch

Health Protection is the branch that is responsible for the development and implementation of legislation, policies and programs in the areas of food safety. Health Protection works closely with the BCCDC, the PHO and HA who have the primary responsibility for providing surveillance and monitoring of activities and premises, which may affect the public's health.

The Branch is responsible for the development and ongoing review of the following food safety legislation:

- Public Health Act
- Food Safety Act

Office of the Provincial Health Officer (PHO)

The PHO is the senior medical health officer for BC. The PHO's responsibilities are outlined in the Public Health Act and include:

- Providing independent advice on health issues to the Minister and Ministry
- Reporting to British Columbians on the health of the population and other health issues
- Recommending actions to improve health and wellness
- Reporting on progress towards achieving BC's health goals
- Working with the BCCDC, HA, and MHO to fulfill their legislated mandates on disease control and health protection.

The PHO plays a key role in the management of foodborne illness outbreaks, acting as the main provincial liaison on the matter, helping marshal provincial resources as needed, and providing updates and advice to the Province.

Agency	Legislation	Regulations, Policies, MOUs	Activity Type	Establishment Type/Scope
Ministry of Health (PHO or designate)	• Public Health Act	• Communicable Disease Regulation	Provides authority for all matters pertaining to health and disease prevention. Establishes governance framework for public health and tools for preventing and removing a broad range of health hazards. Sets out roles and responsibilities of the PHO in relation to outbreak management and oversight of other public health professionals, as well as advisory and educational roles provided to Minister and BC public.	Standards for a variety of institutions, facilities and businesses that could pose a risk to public health (e.g., processing plants, restaurants and grocery stores).
Ministry of Health	• Public Health Act	• Food Premises	Outlines public health	Food premises

		Regulation	requirements for food premises that supply and serve food to the public. Sets out regulatory regime for licensing, inspecting and responding to complaints regarding food premises.	conducting business within BC, excluding federally registered establishments
Ministry of Health	• Public Health Act	• Sanitary Regulations	Sanitary requirements for different businesses, including food establishments. Outlines powers of MHO and inspectors in responding to unsanitary conditions at food establishments.	Persons selling foods
Ministry of Health	• Food Safety Act	• NA	Outlines public health requirements for all food related businesses (farm to fork) that produce, supply, and serve food to the public. Sets out regulatory regime for licensing, inspecting and responding to complaints regarding food industry. Includes legislative authority for recall of food.	Food establishments conducting business within BC, excluding federally registered establishments
Ministry of Health	• Food Safety Act	• Meat Inspection Regulation	The regulation governs the slaughter of animals for food sold in BC and provides for consistent standards in relation to licensing, inspection and slaughter across the province.	Slaughter establishments and transitional slaughter establishments conducting business within BC, excluding federally registered plants

BC Ministry of Agriculture (MAg)

MAg may play a support role during some potential foodborne outbreaks, primarily where an outbreak is traced to farms in BC. In that capacity, they work directly with the Ministry of Health, the BCCDC, and regional HA.

MAg's Abbotsford Agriculture Centre has laboratory testing capabilities and Food Safety Specialists who may provide information and knowledge to BC's food producing and processing sector. They help industry develop good production and processing practices, assess and identify hazards and implement safe food systems based upon risk management principles. Applicable legislation gives MAL licensing authority for dairy plants and fish processing plants.

Agency	Legislation	Regulations, Policies, MOUs	Activity Type	Establishment Type/Scope
MAg/ Ministry of Health/BCCDC	<ul style="list-style-type: none"> • Milk Industry Act 	<ul style="list-style-type: none"> • Milk Industry Standards Regulation 	<p>Testing of processed dairy products and raw milk, the licensing of dairy plants, workers dairy farms and transporters and the inspection of these premises.</p> <p>BCCDC plays a key role in the licensing and inspection of these entities. MAg plays a key role in licensing and inspection of the farms.</p> <p>Legislation also applies to dairy farms, and MAL administers this part of the regulation.</p>	<p>Dairy Plants Dairy Farms Transportation of raw milk</p>
MAg/ Ministry of Health /HA	<ul style="list-style-type: none"> • Fish Inspection Act 	<ul style="list-style-type: none"> • Fish Inspection Regulations 	<p>Governs fish and shellfish harvested, processed, and sold in BC, the licensing of fish processing plants, and the inspection of these premises.</p> <p>HA are responsible for inspecting and recommending approval of provincially licensed fish processing plants to MAL.</p>	<p>Processing Plants</p>

Canadian Food Inspection Agency (CFIA)

CFIA delivers all federal inspection and enforcement services related to food in federally registered and some non-registered manufacturing facilities. The CFIA administers and enforces 13 federal acts that address all stages of the food continuum. The CFIA inspects not only foods, but also the seed, livestock feed, fertilizers, plants and animals on which a safe food supply depends.

The CFIA contributes to the investigation and control of foodborne illness outbreaks through its food safety investigation and recall activities, as well as its regulatory compliance and enforcement activities.

Within CFIA there are three groups that play key roles in the food safety response to foodborne illness outbreak situations:

- Inspection staff including Area Recall Coordinators (ARC) involved in food safety inspection activities. The ARCs are also the usual first point of contact for local/regional and P/T foodborne illness outbreaks. In the Western Area, and specifically in BC, a Regional Recall Coordinator (RRC) is in place for CFIA, and that position would be the first point of contact related to BC activities and the BC FIORP.
- The Office of Food Safety and Recall (OFSR) group is the usual first point of contact for national and international foodborne illness outbreaks and is responsible for the coordination and consistency of decision making on food safety issues and recalls.
- The Food Safety Division (FSD) is responsible for providing scientific analysis and guidance to CFIA staff as well as being the link with Health Canada for obtaining health risk assessments as appropriate.

Under the Canadian Food Inspection Agency Act, if a food product poses a risk to public health, the Minister of Agriculture and Agri-Food may order that the product be recalled. The need to evoke a mandatory recall is usually considered only when a voluntary recall is not initiated.

Agency	Legislation	Regulations, Policies, MOUs	Activity Type	Establishment Type/Scope
CFIA	• Food and Drugs Act	• Food and Drug Regulations	Food safety investigations	All establishment types

Health Canada (HC)

HC has the mandate to establish policies and standards related to the safety and nutritional quality of food sold in Canada, to assess the effectiveness of the CFIA's activities related to food safety, and to contribute to the investigation and control of foodborne illness outbreaks.

Four agencies within HC may be involved or assist with investigations of foodborne illness:

- Within the **Health Products and Food Branch**, the Food Directorate and the Veterinary Drugs Directorate are responsible for providing, upon request, health risk assessments to the CFIA.
- The **Healthy Environments and Consumer Safety Branch (HECSB)**, through its Workplace Health and Public Safety Program (WHPSP), is responsible for the prevention and control of foodborne illness on common carriers (e.g., cruise ships, airlines, passenger ferries and passenger trains) and their ancillary services (e.g. flight kitchens). WHPSP has an advisory and consultative role with regard to food and water safety and the investigation of foodborne illness outbreaks to other federal departments. Inspections, audits, programs and services are implemented based on voluntary compliance agreements with these parties. WHPSP also has a public health response role under the Quarantine Act at points of entry and aboard conveyances.
- The **First Nations and Inuit Health Branch (FNIHB)** Environmental Public Health Program works with Chiefs, Councils, food service operators, community meal programs and residents to prevent foodborne illness in First Nations communities by addressing public health issues related to both traditional and conventional foods through inspection, review of plans, consultation, training, public education and public health research. Environmental Health Officers also work to prevent foodborne illness in several ways:
 - Provide food handler training as well as routine and requested inspections of food service establishments in First Nations communities.
 - Disseminate food recalls and alerts in the communities where they work.
 - In case of a suspected or confirmed foodborne illness outbreak, work as part of the response team to address the issue.

- Collect food samples or provide recommendations for further food sampling.
- Complete additional inspections of food establishments to identify the source of an outbreak.

For more information about the FNIHB food safety program, refer to *Framework for the Food Safety Program in First Nations Communities South of 60 Degrees* (2008).

- The **Pest Management Regulatory Agency (PMRA)** is responsible for providing, upon request, health risk assessments to the CFIA and assisting the CFIA, upon request, with investigations involving pesticides.

Agency	Legislation	Regulations, Policies, MOUs	Activity Type	Establishment Type/Scope
Health Products and Food Branch (HPFB)	<ul style="list-style-type: none"> • Food and Drugs Act 	<ul style="list-style-type: none"> • Food and Drug Regulations 	Food safety investigations involving foods and veterinary drugs Provision of health risk assessments upon request	All establishment types
Healthy Environments and Consumer Safety Branch (HECSB)	Department of Health Act Quarantine Act	Potable Water Regulations for Common Carriers	Public health inspections to ensure safe food, potable water and sanitary conditions; monitoring and responding to gastrointestinal disease outbreaks; and, assists federal departments in implementation of drinking water management practices.	Passenger conveyances and their ancillary services (e.g. ferries, cruise ships and trains)
First Nations and Inuit Health Branch (FNIHB)			Prevent foodborne illness in First Nations communities by addressing public health issues related to both traditional and conventional foods through inspection, review of plans, consultation, training, public education and public health research.	Establishments on federal reserves

Pest Management Regulatory Agency (PMRA)	<ul style="list-style-type: none"> • Pest Control Products Act 	<ul style="list-style-type: none"> • Pest Control Products Regulations 	Promotes and verifies compliance with the PCP Act and Regulations through investigations, inspections and consultations.	All establishment types
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Public Health Agency of Canada (PHAC)

PHAC was created to deliver on the Government of Canada’s commitment to help protect the health and safety of all Canadians. Its activities focus on preventing chronic diseases, preventing injuries and responding to public health emergencies and infectious disease outbreaks.

Within PHAC, the usual first point of contact for issues related to actual or potential foodborne illness outbreaks is the Centre for Foodborne, Environmental and Zoonotic Infectious Diseases (CFEZID).

The Canadian Field Epidemiology Program (CFEP) provides specialized training for health professionals in the practice of applied epidemiology. Field Epidemiologists may be deployed to assist in field investigations of foodborne disease outbreaks within the jurisdiction of their placement or as an Epi Aid to local/provincial/territorial public health authorities. Field Epidemiologists may also assist international outbreak investigations.

The National Microbiology Laboratory (NML) provides reference services for strain differentiation, national laboratory based surveillance, dissemination of information through PulseNet Canada and the National Enteric Surveillance Program (NESP).

Agency	Legislation	Regulations, Policies, MOUs	Activity Type	Establishment Type/Scope
Public Health Agency of Canada	<ul style="list-style-type: none"> • Public Health Agency of Canada Act 	<ul style="list-style-type: none"> • NA 	Health surveillance and epidemiology	All establishment types

RCMP / Local Police

If an outbreak is suspected to be related to criminal activity (e.g., terrorism), police assume the responsibility for the law enforcement response and the criminal investigation.

The RCMP may activate the National Counter-Terrorism Plan, if required, which identifies the authorities for command and action at various levels. The National Counter-Terrorism Plan is administered by the Solicitor General of Canada under the Anti-Terrorism Act of 2001.

The RCMP has installed four Integrated National Security Enforcement Teams (INSET) in major urban centres in Canada, including one in Vancouver to serve British Columbia. INSETs gather information to prevent, detect and prosecute criminal offences against national security, and may include local police resources.

In the event of suspected criminal activity related to the outbreak of a foodborne illness, the Coordinating Committee should contact the police department in the affected jurisdiction and INSET at (604) 598-4040 during business hours and (604) 264-2080 after hours.

Agency	Legislation	Regulations, Policies, MOUs	Activity Type	Establishment Type/Scope
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RCMP, Integrated National Security Enforcement Team (INSET)	<ul style="list-style-type: none">• Anti-Terrorism Act	<ul style="list-style-type: none">• National Counter-Terrorism Plan	Investigation, law enforcement, security	All suspected locations
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Annex C – Roles and Responsibilities of the Most Responsible Agency (MRA)

The MRA plays a coordinating role and in no way controls or directs other agencies. The MRA takes all Coordinating Committee members' needs into account. The MRA is responsible for all coordinating roles. If the MRA needs assistance, it can ask another agency to fulfill one or several required roles. These roles include:

- Coordinate investigation and response to outbreak
 - Ensure regular communications and information sharing between involved agencies, including those not on the Coordinating Committee but who may need to know (e.g. PHAC)
 - Ensure all involved agencies have the information required to take action under their mandate
- Chair the Coordinating Committee
 - Notify all involved agencies
 - Set agenda
 - Setup teleconference/meeting logistics
 - Chair meetings
 - Summarise discussions and action items
 - Disseminate minutes
- Conduct integrated analysis
 - Collate and integrate all available epidemiological, laboratory and food investigation findings
 - Disseminate results of integrated analysis to Coordinated Committee members
 - Generate and propose unifying hypotheses as to the cause and source of the outbreak
 - Identify potential gaps in information
 - Identify actions that may be need to be taken
- Help determine and then communicate the activation of FIORP, the end of the outbreak and outbreak investigation
- Prepare and circulate an “Outbreak Summary” that chronicles key events and findings from the outbreak investigation if necessary
- Plan and chair a “debrief session” if necessary

Annex D – BC FIORP Meeting Agenda Template

SAMPLE

Date and Time of Meeting:	
Participants: <ul style="list-style-type: none">• List of Participants• Agency of each participant	
Situation Update: <ul style="list-style-type: none">• Short bullet statements with key points or information items (e.g., new cases, media enquiries, new or ongoing key initiatives, etc.)	
Activation of BC FIORP	
Determination of MRA/Transition of MRA	
Action Items: <ul style="list-style-type: none">• Actions following from discussion, including person responsible for reporting status at next meeting.	
Next Meeting: <ul style="list-style-type: none">• Date and time of next call.• Reminder of dial-in procedures.	

Annex E - Suggested items to be shared during the MRA/CC Chair transition

The following items have been identified as potential resources that should be shared between the MRAs/CC Chair during a transition. These items would assist in ensuring continuity of investigation and effective communications.

1. Data
 - a. Case information as appropriate under data sharing agreements (e.g. aggregate information, case reports, etc.)
 - b. Excel linelists
2. Database
 - a. Data dictionary
 - b. Programs for analysis or description of analysis process
3. Interpretation summary of any analysis performed
4. Key contact lists
5. Email distribution list
6. Meeting minutes
7. Summary of key actions taken
8. Current version of investigation tools (E.g., questionnaires, traceback flowcharts)
9. Emails/notes from additional meetings which may be required for the investigation but not available to all investigation team members
10. Handover meeting between outgoing and incoming MRA to discuss issues of investigation and items being transitioned
 - a. Discussion of results and key hypotheses
 - b. Review of outstanding actions (e.g. data required from cases or site visits, updates to questionnaire, analysis, etc, communications required)