

Foodborne Illness Outbreak Investigation Protocol (SK-FIOIP)

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Acknowledgements

This Saskatchewan Foodborne Illness Outbreak Investigation Protocol (SK FIOIP) is based in part on *Canada's Foodborne Illness Outbreak Response Protocol (FIORP): A guide a multi-jurisdictional enteric outbreak response*, which was developed through a partnership among Provincial/Territorial Governments, the Public Health Agency of Canada, Health Canada and the Canadian Food Inspection Agency. The SK FIOIP has also included some components of the Ontario Foodborne Illness Outbreak Response Protocol (ON-FIORP) 2013, the Alberta Foodborne Illness and Risk Investigation Protocol (FIRIP) 2017, the Manitoba Enteric Illness Protocol, and the British Columbia Foodborne Illness Outbreak Response Protocol (BC-FIORP) 2012 as a guide to develop a standard protocol.

The SK FIOIP was developed by the Saskatchewan Ministry of Health – Population Health Branch with review from:

- Saskatchewan Ministry of Agriculture (MoA)
- Saskatchewan Health Authority (SHA) – Communicable Disease Investigation, Environmental Public Health, and Medical Health Officers
- Saskatchewan Health Authority - Roy Romanow Provincial Laboratory (RRPL)
- Canadian Food Inspection Agency (CFIA)
- Health Canada (HC)
- Indigenous Services Canada-First Nations and Inuit Health Branch (Sask Region) (ISC)
- Northern Inter-Tribal Health Authority (NITHA)
- Public Health Agency of Canada (PHAC)

List of Abbreviations and Acronyms for this Document

AHA: Athabasca Health Authority

CFIA: Canadian Food Inspection Agency

EOC: Emergency Operations Centre

PHAC: Public Health Agency of Canada

FIORP: Canada's Foodborne Illness Outbreak Response Protocol

FNIHB: First Nations and Inuit Health Branch

HC: Health Canada

HRA: Health Risk Assessment

ICS: Incident Command System

MHO: Medical Health Officer

MOU: Memorandum of Understanding

MRA: Most Responsible Agency

NITHA: Northern Inter-Tribal Health Authority

NML: National Microbiological Laboratory

OFSR: Office of Food Safety and Recall

OICC: Outbreak Investigation Coordinating Committee (under FIORP)

PHAC - OMD: PHAC Outbreak Management Division

PHI: Public Health Inspector

RRPL: Roy Romanow Provincial Lab

RCMP: Royal Canadian Mounted Police

SK-FIOIP: Saskatchewan Foodborne Illness Outbreak Investigation Protocol

SK-OICC: SK FIOIP Outbreak Investigation Coordinating Committee

WHO: World Health Organization

1. Introduction

The investigation of and response to foodborne illness outbreaks in Saskatchewan involves multiple government agencies with complementary responsibilities. To enhance the collaboration and overall effectiveness of government response during these events, the Saskatchewan Ministry of Health has developed the Saskatchewan Foodborne Illness Outbreak Investigation Protocol (SK FIOIP).

The SK FIOIP provides the framework for a coordinated response to enteric and other foodborne illness outbreaks or food safety risks in Saskatchewan, should a coordinated response be deemed necessary, as indicated in the scope and operating procedures sections. It is based in part on Canada's Foodborne Illness Outbreak Response Protocol (FIORP), and also some components of AB FIRIP (2017), ON FIORP (2013), and BC FIORP (2012).

Canada's FIORP will continue to provide guidance in response to interprovincial and international outbreaks. The SK FIOIP is designed to help protect public health through effective and efficient response to foodborne hazards and illness outbreaks in Saskatchewan. The partners understand and acknowledge that the SK FIOIP has no legal force or effect, and that notwithstanding the definitions above, the terminology used herein shall generally be construed by its informal meaning.

Collaboration among these partners and across jurisdictions is of utmost importance to effectively manage enteric foodborne illness outbreaks. The partners recognize that formalized approaches will facilitate such collaboration and cooperation, thereby protecting the health and safety of the people of Saskatchewan.

Definitions used throughout this document can be found in [Appendix 1](#).

2. Purpose

The purpose of the SK FIOIP is to provide the framework for an effective coordinated response to outbreaks linked to food in Saskatchewan, should a coordinated response be deemed necessary, in order to:

- Initiate and enhance collaboration and coordination among partners;
- Establish clear lines of communication and information sharing among partners; and,
- Improve the efficiency and effectiveness of response, protecting the health and safety of the people of Saskatchewan.

It is designed to be used in a coordinated response to enteric and other foodborne illness outbreaks or food safety risks in Saskatchewan.

The SK FIOIP serves to guide the collaboration of partners and to clarify expectations in the identification and response to foodborne illness outbreaks/food safety risks. It is not intended to provide detailed instruction on how to conduct investigation and response. Outbreak investigation and response policy can be found in the [Outbreak Chapter of the Saskatchewan Communicable Disease Control Manual](#).

3. Scope

The SK FIOIP covers activities involved in the confirmation of a potential foodborne illness outbreak/food safety risk, and the containment of the risk that triggered the outbreak, including resolution of the issue. It also includes the post-outbreak debrief process.

This protocol addresses potential foodborne illness outbreaks/food safety risks resulting from natural, accidental, or intentional contamination of foods by microbiological, chemical, physical, or other hazardous substances (e.g., radiological hazards).

The SK FIOIP may be used by any partner to ensure a coordinated response whenever a food is linked, suspected to be involved in or has the increased potential to cause a foodborne illness outbreak in Saskatchewan. The protocol does not specifically address the broader risk assessment process that contributes to policy development and standard setting to reduce the risk of future outbreaks. However, there is the opportunity, during the post-outbreak debrief, to raise the need for future policy development to manage risk(s).

For outbreaks related to *Clostridium botulinum* refer to the [Botulism Chapter](#) of the Saskatchewan Communicable Disease Manual. For botulism testing and specimen submission refer to Annex 4 of the FIORP. All botulism testing is to be referred to the Botulism Reference Services (BRS) in Ottawa.

In the event that a foodborne illness outbreak (or the potential for one) has provincial multi-geography, multi-jurisdictional and/or complex outbreak implications (see Appendix 1 for definitions), an assessment call will be arranged with partners to determine if a SK FIOIP Outbreak Investigation Coordinating Committee (SK-OICC) needs to be established at this time or if monitoring and reassessment will continue.

When a foodborne illness outbreak affects, or has the potential to affect, more than one province/territory, or affect at least one province/territory and another country/countries, PHAC will coordinate the multi-jurisdictional outbreak response in collaboration with affected partners, as per Canada's FIORP. Further to this, a SK-OICC may be activated/remains activated if a multi-geography, multi-jurisdictional and/or complex outbreak response is needed within Saskatchewan.

4. Roles and Responsibilities

In Saskatchewan, the response to foodborne illness outbreaks is shared between local authority, provincial, and federal jurisdictions and requires cooperation and teamwork among all agencies involved. Detailed descriptions of partner roles and responsibilities are provided in [Annex 2](#).

5. Guiding Principles

The partners are encouraged to raise awareness of the SK FIOIP within their own organizations, including circulating the document to senior management. Partners are also encouraged to participate in simulation exercises and training.

The SK FIOIP will serve as the reference document to guide a coordinated response to foodborne illness outbreaks and unacceptable food risks occurring in the province. The Ministry of Health will act as the custodian of the SK FIOIP and will be responsible for its maintenance and regular review.

The majority of foodborne illness outbreak investigations will not require the activation of a provincial Emergency Operations Centre (EOC) or adoption of the Incident Command System (ICS); however, if an outbreak becomes beyond the ability of day-to-day operations to respond, a formal ICS or EOC may be activated. Partners may elect to activate an EOC or ICS within their organization, regardless of whether a provincial EOC or ICS has been activated. Partners that are implementing an ICS will determine the types of events or outbreaks that will trigger the use of such a system.

The SK FIOIP is intended to complement arrangements and procedures already established among the partners. Where a memorandum of understanding (MOU) or other arrangements between the partners regarding food safety surveillance, investigation, or control may exist, they will be shared and respected.

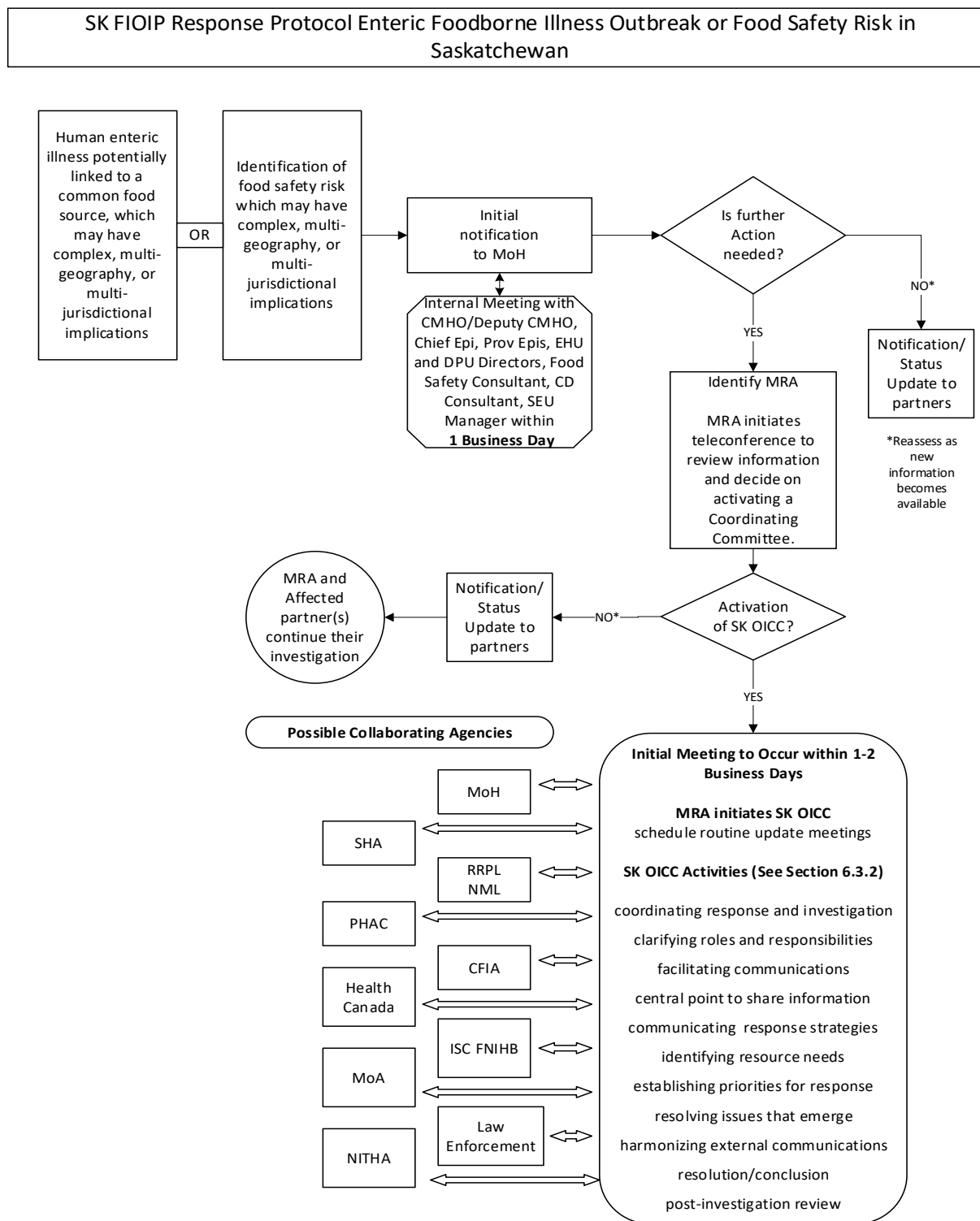
Subject to applicable laws governing sharing of information, the partners recognize that information (which could include sharing of personal information) required to investigate, control, and resolve a foodborne hazard or illness outbreak may be exchanged in confidence and in a timely fashion between the partners. The partners also recognize that public disclosure of confidential third party and personal information may be required when an outbreak that could pose a risk to public health is identified, and it is important to make this information public. Any disclosure shall follow existing privacy policies and applicable legislation.

When the SK-OICC is established in accordance with this SK FIOIP, it will serve as the main forum for information sharing, interpretation of outbreak investigation information/data/evidence, clarification of roles and responsibilities, determination of response priorities and activities, and the development of communication strategies among SK-FIOIP partners.

When a SK-OICC member is bringing in others from their organization it is the responsibility of that member to brief the new participant(s) on activities to date, in order to facilitate efficient SK-OICC meetings. Only one representative should be speaking for the organization, as much as possible, to avoid confusion.

6. Response Framework

Figure 1: SK FIOIP Response Framework



6.1 Foodborne Illness Outbreak/Food Risk Identification

A potential foodborne illness outbreak may be determined by the partners through the any of the following routes:

1. Identification of Human Enteric Illness Potentially Linked to a Common Food Source

- Partner(s) may identify an unusual increase in the number of enteric illness cases as a result of routine surveillance activities at the local, provincial or national level; and a follow up food safety investigation demonstrates that a specific source may be implicated in a foodborne illness.
- The outbreak is the result of a contaminated or suspected to be contaminated food which is sold or distributed interprovincially, interprovincially, or internationally.

2. Identification of a Food Safety Risk

- Consumer complaints concerning a food, which may involve reports of illness.
- Process deviations identified during inspection activities could result in the production of foods that may pose a health risk to the consumer if the foods are distributed.
- Notification from a manufacturer/processor/importer that uncovers a problem that may pose a health risk to the consumer.
- Information from other countries that indicate one of their exported foods has the potential to cause illness.
- Information may be identified by partners as a result of a food safety investigation, sample monitoring, surveillance, or information provided by other provincial, federal or foreign governments.

6.2 Notification to Partners, Initial Assessment and SK-FIOIP Coordinating Committee Activation

6.2.1 Most Responsible Agency – Outbreak Lead and Coordinator

In any outbreak it is important to identify the most responsible agency (MRA). The MRA will vary depending on the location and complexity of the outbreak. See [Figure 2](#) for Map of Agencies

- For provincial single geography outbreak, the health authority where the outbreak is occurring will be the MRA. This is most often the SHA, but may be ISC, NITHA or AHA.
- For Provincial Multi-Geographical Outbreaks, the MoH-PHB assumes the role of MRA-Lead Outbreak Coordinator.
- For multi-provincial/multi-national outbreaks, PHAC by way of the OICC is the MRA, with the MoH-PHB being the MRA for the provincial outbreak activities.

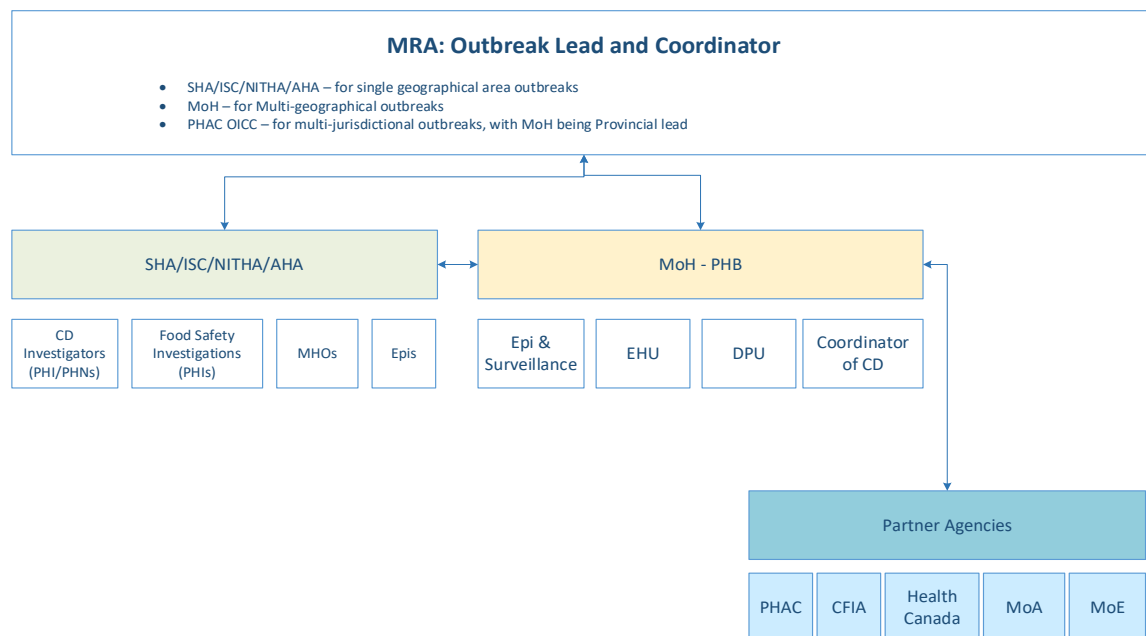
The MRA plays a coordinating role and in no way controls or directs other agencies. The MRA takes all outbreak response members' needs into account. The MRA is responsible for all coordinating roles, including standing up the SK-OICC, scheduling meetings, and sharing minutes.

The local MHO (FNIHB-SK, NITHA, SHA) with jurisdictional responsibility for the area where the majority of cases reside, or the source of the outbreak, is considered the outbreak lead and the likely candidate to chair the SK-OICC, unless otherwise decided; however, a lead outbreak investigator must also be identified. This individual, who may be an epidemiologist assigned by local MHO, public health inspector, communicable disease coordinator, public health nurse or other public health practitioner, is responsible for coordinating and summarizing all data and actions between the different content areas involved in the outbreak.

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 following existing outbreak communication pathways (i.e., MoH communicates to PHAC).
 - Ensure all involved agencies have the information required to take action under their mandate.
- Chair the SK-OICC.
 - Notify all involved agencies.
 - Set agenda.
 - Setup teleconference/meeting logistics
 - Chair meetings
 - Summarize 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 SK-OICC members
 - Generate and propose unifying hypotheses as to the cause and source of the outbreak.
 - Identify potential gaps in information.
 - Identify actions that may need to be taken.
- Help determine and then communicate the activation of SK-OICC, outbreak investigation actions, the end of the outbreak, and post-outbreak debrief.
- Prepare and circulate a final “SK-OICC Summary Report” that chronicles key events and findings from the SK-OICC outbreak investigation. The report is due 30 days following the date the outbreak was declared over. [Communicable Disease Control Manual - Outbreaks \(ehealthsask.ca\)](https://ehealthsask.ca/communicable-disease-control-manual-outbreaks)
- Plan and chair a “Post-Investigation Debrief” session within one (1) month of the closure of the OICC. See Post-outbreak debrief template [Appendix 1](#).

Figure 2: Map of Agencies



6.2.2 Notification to Partner Agencies

Upon the identification of a foodborne illness outbreak, or food safety risk associated with a food in Saskatchewan, partner agency staff are responsible to personally advise the SK-OICC designate within their organization. This initial organizational contact/designate will assess to determine if the outbreak or risk is complex and/or had multi-geographical or multi-jurisdictional implications. If it does, they will notify all SK FIOIP designates.

If a partner is not sure if the risk is unacceptable, the partner will notify the other designated contacts on the SK-OICC.

SK-OICC Contact List (See [Annex 3](#)). Initial notification is normally via e-mail to the SK-OICC contacts. Upon this notification, any partner may request a teleconference to discuss the issue further.

6.2.3 Initial Assessment Call

A timely teleconference call, scheduled by the MRA, will be held among the SK-OICC Contacts to review the available information and decide whether a SK-OICC should be activated (See [Figure 1](#)).

- If the partners agree that a SK-OICC is to be activated, a chairperson will be chosen for the SK-OICC.
- If the partners agree that a SK-OICC is not required at that time, further SK-OICC assessment calls can be held if new information warranting collaborative assessment becomes available.

Additional partners may be included as required.

6.2.4 SK FIOIP Outbreak Investigation Coordinating Committee Activation

The SK-OICC may be activated when a foodborne illness outbreak/food safety risk requires a coordinated response among partners and considers either or both of the following:

- A reasonable probability that the outbreak/food safety risk is associated with food
- A confirmed or suspected foodborne illness outbreak has been identified.

6.3 SK FIOIP Outbreak Investigation Coordinating Committee (SK-OICC)

6.3.1 Composition of the SK FIOIP Outbreak Investigation Coordinating Committee (SK-OICC)

The SK-OICC will be comprised of representatives from each of the partners involved in the foodborne illness outbreak investigation. The SK-OICC will be chaired by a representative from the MRA. It is the responsibility of each partner to designate a representative for the SK-OICC. One representative from each Partner will be identified at the beginning of each SK-OICC call, to report on their organization's activities. The representative can also involve colleagues from within their organization to provide additional support. However, to be efficient, only one representative should be speaking for each partner agency/partner agency area, as much as possible.

The composition of the SK-OICC will depend on the nature of the foodborne illness outbreak/food safety risk and may evolve as knowledge related to the source of the outbreak is generated. The SK-OICC should, at minimum, have representatives that provide epidemiological, food safety, laboratory, case investigation, outbreak investigation, and communication expertise from the different partners. Other agencies may be invited to participate as required.

6.3.2 Purpose of the Coordinating Committee

The initial purpose of the SK-OICC will be communication and sharing information on a potential outbreak or food risk. If further action is deemed necessary, the SK-OICC is responsible for:

- Coordinating a provincial outbreak response and investigation;
- Clarifying roles and responsibilities of Partners specific to the incident;
- Facilitating communications among participating organizations;
- Serving as a central point to share information from all sources and discuss findings;
- Communicating outbreak response strategies and coordinating investigations among the partners, such as follow-up and corrective actions;
- Identifying resource needs and opportunities for sharing resources;
- Establishing priorities for response where critical resources are limited or constrained;
- Gain consensus in resolving issues that emerge;
- Harmonizing external communications, ensuring the release of consistent and complementary messages to the public and other stakeholders; and,
- Deactivating of SK-OICC once the outbreak is resolved and conducting a post- outbreak review session.

Evidence from laboratory, epidemiological, or food safety investigations are used for establishing the association between a particular food or hazard and human illness.

Partners collecting food or environmental samples during an investigation should share the sampling plan (including intent and rationale) with the SK-OICC, prior to conducting the sampling (where possible), to facilitate a common understanding of the direction of the investigation and interventions.

6.3.3 Decision-Making and Resolving Differences of Opinion

The SK-OICC is to enhance collaboration and coordination among partners during a foodborne illness outbreak/food safety risk. This requires the SK-OICC to make consensus-based decisions to develop coordinated strategies. While the SK-OICC will strive to reach consensus to guide response actions, the SK-OICC partners recognize that each partner has unique legal obligations, policies, and mandates that must be respected.

Decisions made by one of the partners pursuant to its obligations, but related to the purpose of the SK-OICC, should be communicated to all SK-OICC members.

The SK-OICC will attempt to resolve all differences of opinion during the course of an outbreak investigation. However, when consensus cannot be reached, the partners should seek guidance from senior officials in their respective agencies through their identified SK-OICC contact person. Any decision made by senior officials in resolving the issue should be communicated to all SK-OICC partners in a timely manner.

6.3.4 Contacts for the Initiation of the Coordinating Committee

The list of partner agency designates for the SK-OICC is provided in [Annex 3](#). The list will be updated twice annually and distributed to SK FIOIP SK-OICC contacts. The partner designates may delegate the appropriate people to be members of a SK-OICC.

6.3.5 Purpose of Initial Meeting of the Coordinating Committee

The initial meeting should occur within one to two calendar days upon activation of the SK-OICC. At the initial meeting, SK-OICC members will share information regarding facts, investigative information and potential events to determine if there is a need to develop and/or to take the following actions:

- Ensure SK-OICC chairperson is adequately resourced to document meetings (including having a scribe as needed);
- Identify or confirm the lead investigation partner(s);
- Develop an action plan and designate working groups as needed;
- Determine what further investigation is required;
- Make recommendations for further investigation and assignment of responsibilities;
- Assigning minute taker (scribe if assigned and attending);
- Clarify communication lead(s), as per Section 6.4; and,
- Confirm how urgent issues identified outside of business hours will be managed.

6.3.6 SK-OICC Chair transition

The following items have been identified as potential resources that should be shared between the MRA/SK-OICC 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 line lists
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, trace back 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)

6.4 Communications

The SK-OICC designates will gather and discuss information via conference calls, electronically, or via in person meetings, as required.

6.4.1 General

Communications staff from the partner organizations involved in the outbreak will be integrated into the SK-OICC when it is established, to develop a communications strategy and share information about the outbreak/food safety risk. Communications staff from the lead organizations may convene a teleconference with their counterparts in other involved organizations to establish an outbreak communications team and key messaging.

The communications team will usually be chaired (or co-chaired) by communications from the lead response organization(s). The team will develop, in collaboration with the SK-OICC, a coordinated approach and messaging for communicating with the public and those at greater risk. The SK-OICC will also provide input and be a forum for discussion and planning for the communications approach.

Approval of the approach and tactics will be required from senior management of the partner organizations as appropriate.

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)

6.4.2 Public Communications

In an outbreak/food safety risk situation, there may be a need to provide information and regular updates to the media, public, and other stakeholders, including those at greater risk. There will also be a need for communication among the partners to ensure consistency of messaging and to draft and share messages in a coordinated manner.

The lead response organization(s), in consultation with the communications team, will assess the need, content, timing, and appropriate activities for communicating about the outbreak. Communications team members will discuss and make recommendations to senior management of each organization. The communications team will share final public communications products with the partners involved prior to release wherever possible.

Organizations may choose to provide public information independently with respect to their individual expertise and legislative responsibilities. Should any organization decide to do so, it should advise members of both the communications team and the SK-OICC and share draft messaging prior to releasing the information, if possible. Public messaging must respect the confidentiality of information shared within the SK-OICC.

Where necessary, each partner organization will designate a spokesperson(s) to communicate with the general public, including those at greater risk, and other external stakeholders within its respective jurisdiction.

6.4.3 Information Exchange with Industry

During an investigation, all implicated companies will be kept informed of relevant developments and available support by the responsible inspection authority, as necessary. These companies will be provided with a single point of contact for the inspection authority, if possible.

The CFIA is the responsible inspection authority and primary contact for processors and importers operating under federal license. However, for slaughter plants operating under the provincial domestic meat inspection program, the primary industry contact will be the Ministry of Agriculture; and the SHA for any processors under *The Food Safety Regulations*. During an investigation, the CFIA conducts inspections at both licensed and non-licensed facilities and may contact facilities directly to obtain information and communicate decisions.

Some investigations may require communication with industry representatives beyond the implicated facility. In this case, the SK-OICC will identify the lead communicator according to the partners' mandates and jurisdictions, and ensure the roles and responsibilities of the industry are decided upon. Messaging must respect the confidentiality of information shared within the SK-OICC.

6.5 Investigation Activities

The SK-OICC will coordinate the epidemiological, food safety, laboratory, case and contact investigation, and health risk assessment investigative activities.

6.5.1 Epidemiological Investigation

An epidemiological investigation by one or more partners may already be underway at the time a SK-OICC is activated. The SK-OICC will work to coordinate the investigations and share findings among partners in a timely manner. The SK-OICC may request the epidemiological assistance of other agencies through MoH (e.g., PHAC-OMD).

6.5.2 Food Safety Investigation

The SK-OICC will work to coordinate the food safety investigation and response among partners, and will share food safety investigation findings among partners in a timely manner. The food safety investigation activities should respect the mandate and roles/responsibilities of each partner. See [Annex 2](#) of the SK FIOIP for partner mandates, roles, and responsibilities.

6.5.3 Laboratory Investigation

The laboratory investigation should be coordinated by the SK-OICC to avoid gaps, prevent duplication, and ensure standard methodology/consistent processes, when available. There are also existing arrangements among public health laboratories and food laboratories (i.e., regional labs, RRPL, CFIA, NML) for results confirmation, isolate subtyping and other analyses. The submitting agency that receives a laboratory result will share the result with the SK-OICC.

*If *Clostridium botulinum* is suspected, clinical, food and environmental samples should be sent directly to the BRS in Ottawa following standard procedures outlined in Annex 4 of the FIORP. In the case of samples submitted by SHA, NITHA, AHA or ISC, the RRPL will continue to receive their samples and will coordinate referrals to the BRS in Ottawa according to the developed protocol.

6.5.4 Health Risk Assessment

It is within the mandate of Health Canada's Food Directorate to conduct food-related Health Risk Assessments (HRA). HRAs may be requested by CFIA's Office of Food Safety and Recall (OFSR) and/or by provincial partners.

An epidemiological assessment is typically required during the Health Risk Assessment process, which is to be completed by the MRA. When the MRA is a local or provincial health authority, PHAC-OMD may be asked to comment on the weight of epidemiological evidence in the assessment and provide an abbreviated epidemiologic assessment. For this reason, it is beneficial to involve PHAC-OMD early in the investigation so that they have the contextual information to be able to provide this assessment in a timely manner. In foodborne illness outbreaks, HC uses the approach described in the 2011 "[Weight of Evidence: Factors to Consider for Appropriate and Timely Action in a Foodborne Illness Outbreak Investigation](#)".

When the CFIA requests an HRA, Health Canada will provide the results back to CFIA. All SK-OICC partners will be informed through regular SK-OICC communications, once an HRA has been initiated, and when results are obtained. Informed by the results of the HRA, the CFIA will work with the responsible regulated body to determine whether a food recall is a necessary risk mitigation action and if a food recall will be initiated (see Section [6.6.1](#)).

It is recognized that MoH/SHA may assess the health risk based on available information, to inform possible actions to prevent the spread of a foodborne illness outbreak or to limit a food hazard, in addition to/or in parallel to HC's HRA.

The partners should seek guidance regarding Health Risk Assessments from senior officials in their respective agencies through their identified SK-OICC contact person. Any decision made by senior officials in resolving the issue should be communicated to all SK-OICC partners.

6.6 Public Health and Food Safety Actions

Actions undertaken during a foodborne illness outbreak/ food safety risk to address the source of the outbreak and prevent further cases of human illness may include a wide range of activities by one or more of the partners. Examples include:

- Request a food recall;
- Detaining a product;
- Disposing of contaminated or suspected foods;
- Developing public communication messages;
- Conducting case and contact management; and,
- Recommending/ implementing prevention and corrective actions at implicated facilities.

Each partner will conduct the necessary response actions under its respective mandate. While the SK-OICC will strive to reach consensus to guide response actions, the SK-OICC partners recognize that each partner has unique legal obligations, policies, and mandates that must be respected. Decisions made by one of the partners pursuant to its obligations, but related to the purpose of the SK-OICC, should be communicated to all SK-OICC members.

Where possible, existing provincial/federal guidelines for pathogen specific issues should be followed. In the absence of specific policies, the SK-OICC will help to determine the best course of action to take. Provincial coordination may be necessary at the Executive level to determine the course of action in the absence of a policy, or when an existing policy either is not to be applied or applicable. When appropriate, the SK-OICC may make recommendations to the Executive level.

6.6.1 Food Recalls

The local authority is responsible for the enforcement of *The Food Safety Regulations*. The CFIA is responsible for the enforcement of the *Food and Drugs Act*, the *Safe Food for Canadians Act and Regulations* as they relate to food. When a food is assessed as representing a health risk, the local authority and CFIA (depending on the food item and source) can determine the most appropriate risk management action, including whether or not to request a recall of a food product(s).

The SK-OICC will coordinate the collection of all pertinent information needed to recall an implicated product by the appropriate agencies.

For food or food by-products prepared outside of the federal licensed inspection system, the SK-OICC will coordinate enforcement and responsibilities, as required. Recall effectiveness checks are the responsibility of the agency who is requiring the recall, who, when necessary, can request assistance through the SK-OICC.

Each partner is responsible to communicate all recall actions to the SK-OICC in a timely manner.

6.7 Tampering and Terrorism

If the lead investigation partner(s) suspects that an incident may be related to tampering or terrorism, the local/regional law enforcement agency shall be immediately notified as they have the responsibility for law enforcement response and criminal investigations. Regardless of the police jurisdiction, the RCMP National Operations Center should be contacted at 613-993-4460.

6.8 Outbreak /Risk Resolution

After reviewing the outbreak data, including the containment status of a foodborne illness outbreak, the resolution of the food risk, and the case information, the SK-OICC will declare the outbreak and/or investigation closed when deemed appropriate by all partners. The SK-OICC will communicate the decision and will then hold a timely post outbreak/investigation review.

6.9 Post-Investigation Review

The SK-OICC will conduct a post-investigation review. The post-investigation review should be completed within one (1) month of the declaration that the outbreak/investigation is closed. Unless otherwise agreed upon by the partners, the SK-OICC lead partner will chair the post-investigation review.

The SK-OICC will coordinate this review and information gathered shall be reported back to all members involved in the investigation to review, within one month of the post-investigation review.

For a large investigation involving more than 2 partners, a formal debriefing meeting is recommended and should be organized by the SK-OICC chair. A template post-outbreak debrief can be found in [Annex 4](#). The goals of the post-investigation review should include, but are not limited to:

- Obtaining SK-OICC consensus of the source of the outbreak/food risk.
- Assessment of the effectiveness of public health and food safety actions, and any difficulties met in their implementation.
- Identification of the immediate and long-term measures to prevent reoccurrence, such as recommending new or revised policies and/or standards.
- Evaluation of the collaborative response efforts, including communication and coordination between jurisdictions.
- Clarification of resources, organizational changes, or training needs to optimize future responses.
- Identification of any necessary improvements or adjustments to the SK-FIOIP. Any recommendations for the purpose of updating the SK-FIOIP should be provided to MoH. Changes will only be made with the agreement of all partners.
- Discussion of any privacy and/or legal issues which may have arisen.
- Discussion on joint publication of outbreak findings in journals and/or presentations at conferences.

7. Review of the SK-FIOIP Protocol

Endorsement of the protocol was by the MoH. The protocol will be reviewed periodically by the MoH who may amend the protocol to keep it current and effective. The SK-OICC Contact List will be updated twice per year, initiated by the MoH with each partner responsible for confirming membership contact information. A full review of the protocol should occur at least every five years or as needed.

8. Emergency Operations Centre Activation and Incident Command System

Most multi-jurisdictional foodborne illness outbreak/food safety risk investigations do not require the use of an Incident Command System (ICS) and/or activation of Emergency Operations Centres (EOCs).

The SK-OICC is not intended to be a unified ICS. However, partners may consider using such an approach for some public health emergencies, including foodborne illness outbreaks/food safety risk investigations, to help coordinate the response. Partners that are implementing an ICS will determine the types of events or outbreaks that will trigger the use of such a system.

If an ICS is to be used, it should be incorporated into the partner's foodborne illness outbreak/risk investigation response protocol. In relation to foodborne illness events, all the partners are responsible for notifying other partners of their intent to utilize an ICS and activate their respective EOC(s).

Appendix 1: Definitions

Closed (Intact) Food Sample: Food product remains protected from the external environment and therefore is protected from environmental microbial and/or other external contamination (i.e., integrity of food and food package are uncompromised). The seal of the food package has not been broken

Cluster: An unusual aggregation of similar health events, generally grouped together as they appear over a particular period or geographical area. A cluster may be seen as the occurrence of cases of disease (human illnesses) in excess of what is usually expected for a given period. A cluster may or may not reach the status of an “outbreak.” (Adapted from FIORP)

Emergency Operations Centre: The central location where an organization comes together during an emergency or significant event to coordinate response and recovery actions, and resources.

Enteric illness: A disease of the gastrointestinal tract caused by an infection, toxic-infection or intoxication resulting from the ingestion of bacteria, viruses, parasites, or toxins transmitted through food, water, animals or person-to-person contact.

Epidemiological Evidence: Data demonstrating an association between a source of exposure and human illness.

Epidemiological Investigation: Investigation made to determine the existence of an outbreak, to characterize it over a specific time period, geographical area and describe personal characteristics of cases, and to develop and test a hypothesis explaining the specific exposure(s) that caused disease. The investigation may result in recommendations towards the implementation of appropriate prevention and mitigation measures.

Evidence: That which demonstrates or shows an association between a source of exposure and an illness. 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: Includes any article manufactured, sold, or represented for use as food or drink for human consumption. This includes water, chewing gum, and any ingredient that may be mixed with food for any purpose whatsoever. (Adapted from FIORP)

Foodborne Hazard: A biological, chemical, or physical agent in, or condition of, food with the potential to cause an adverse health effect.

Foodborne Illness (FBI): A human illness, with evidence indicating a food was the source of exposure to the contaminant causing illness. Foodborne illness occurs when a person consumes food contaminated with a biological or chemical hazard/contaminant.

Foodborne Illness Investigation: An investigation of a possible association between human illnesses and a food that includes epidemiological, laboratory, and food safety/ risk investigations.

Food Safety Risk: The exposure of the public, or a population at risk, to a foodborne hazard classified under Health Canada's definition of Health Risk 1 and Health Risk 2 hazard related to food.

Health Risk 1: The health risk identified represents a situation where there is a reasonable probability that the consumption/ exposure to a food will lead to adverse health consequences which are serious or life threatening, or that the probability of a foodborne outbreak situation is considered high or is already occurring.

Health Risk 2: The health risk identified represents a situation where there is a reasonable probability that the consumption/ exposure to a food will lead to temporary or non-life threatening health consequences, or that the probability of a serious adverse consequence is considered remote.

Food Safety/Risk Investigation: Inspection and related activities undertaken by regulatory or related officials to verify whether or not a foodborne hazard which could cause human illness to exist, and to determine the nature and extent of the risk.

Health Risk Assessment (HRA): A scientifically based process to determine the likelihood that a specific health effect will occur in an individual or a population following exposure to a hazardous agent. The following steps are used in the development of an HRA: i) hazard identification, ii) hazard characterization, iii) exposure assessment and iv) risk characterization. In the context of a foodborne illness investigation, if a potential health risk has been identified, a formal request for an HRA is submitted to Health Canada.

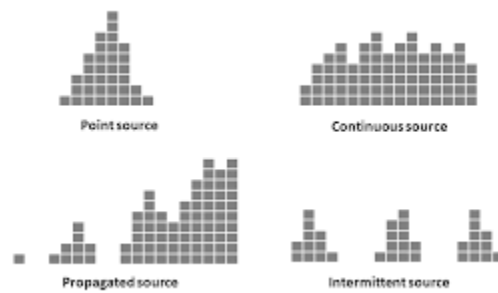
Incident Command System: A standardized on-scene emergency management concept specifically designed to allow its user(s) to adopt an integrated organizational structure equal to the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries.

Laboratory Evidence: The demonstration of an association between cases of human illness or between cases of human illness and the suspect source, through the isolation/identification of the same pathogen, toxin, or contaminant from both sources. For example, identification, characterization or whole genome sequencing of the organism.

Laboratory Investigation: Laboratory analysis to determine the presence of a microbiological or chemical hazard in a food or environmental sample. This can either confirm the presence of the hazard in the food or environment, or identify a common source related to human illness.

Jurisdiction: For the purpose of this document, the area of geography and primary responsibility of one of the partners.

Type of Epi Curve: The visual representation of the manner in which the illness or disease spreads through a population.



Source: <https://outbreaktools.ca/background/epidemic-curves/>

Open (Non-Intact) Food Sample: A food sample that was taken from an unpackaged lot, a previously opened or a torn package, or from a package that due to design (air holes, etc.) could allow pathogens or other to contaminate the food product (i.e., integrity of the food or food packaging is compromised).

Outbreak: A distribution of cases of a communicable disease that exceeds what is expected in terms of time, place or persons affected. Outbreaks may be described in terms of factors that relate to its complexity, jurisdiction, geography, or type of epi curve. Laboratory evidence may suggest an outbreak if multiple cases are matched by whole genome sequence.

Complex Outbreaks: Outbreaks that have one or more of the following:

- A novel, emerging or uncommon pathogen;
- Illness above expected amounts that pressures capacity;
- Illnesses with epidemiologic or case connection requiring inter-jurisdictional coordination;
- Severe illness, hospitalizations or mortality among identified cases;
- A large number of unexplained illnesses involved;
- A transmission source that is not immediately evident;
- A rapidly expanding outbreak;
- An over-represented vulnerable population among cases (e.g., children, elderly) in the community;
- Multiple agencies involved in the outbreak (e.g., PHAC, CFIA, HEMU, MoA, MoE, etc.); and/or
- Significant media or stakeholder attention.

Enteric Foodborne Illness (FBI) Outbreak: An outbreak of human illness with confirming evidence (either epidemiological or laboratory) indicating a food was the common source of exposure to the contaminant causing illness. Once an outbreak is identified and declared, case definitions specific to that outbreak will be developed.

Multi-jurisdictional Enteric FBI Outbreak: A foodborne illness outbreak that occurs in more than one P/T or occurs in Canada and involves another country or countries and requires a coordinated response among partners is required to carry out the investigation.

Provincial Multi-geographical Enteric FBI Outbreaks: An outbreak that occurs in more than one Saskatchewan Geographic Jurisdiction (i.e., more than one SHA integrated service area, one SHA integrated service and NITHA, etc.).

Provincial Single Geographical Enteric FBI Outbreak: An outbreak that occurs solely within one Saskatchewan geographic jurisdiction.

Partner: Any agency with a responsibility to investigate or respond to foodborne illness outbreaks/food safety risk in Saskatchewan; including both provincial and federal agencies that share food safety and public health responsibilities. See Annex 2 for Roles and Responsibilities.

Ready-to-Eat Food: Food not requiring any further preparation to achieve food safety before consumption.

Recall: Denotes the process of the removal of a food from further sale or use, or the correction of its label, at any point in the supply chain as a risk mitigation action.

Response: In the context of foodborne illness outbreaks or food safety risks, response includes activities related to the determination, investigation, mitigation, and containment of such outbreaks/risks, as well as, related communication activities.

SK-FIOIP Coordinating Committee (SK-OICC): A committee with representation from the partners, created to coordinate a multi-jurisdictional response to a foodborne hazard or illness outbreak in Saskatchewan.

Saskatchewan Geographic Jurisdiction: Broad geographical areas in Saskatchewan, including SHA Integrated Service Areas, NITHA, AHA, and FN lands.

Spokesperson: A partner representative(s) identified by each partner to communicate with the SK-OICC, other stakeholders, and coordinate enquiry responses, on behalf of their organization/agency as required.

Tampering, Sabotage, or Terrorism: Actual or suspected deliberate contamination of food.

Trace back: A method used to determine and document with a high degree of confidence, the origin of a particular food that has been contaminated or associated with foodborne illness/food safety risk.

Trace forward: A method used to determine and document with a high degree of confidence the distribution and destinations of a particular food that has been contaminated or associated with foodborne illness/food safety risk. This may be used to facilitate recall and removal of at-risk products from potential sale or use, and in hypothesis generation.

Annex 2: Partner Roles and Responsibilities for SK Foodborne Illness Outbreak Management

[See attached DRAFT standalone document for partner consultation]

Annex 3 – SK FIOIP Contact List - DRAFT

Contact Name and Position	Daytime Telephone	After Hours Telephone	Cell/Pager	Fax	Email Address
Ministry of Health					
SASKATCHEWAN					
Out-of-Hours: 1-306-337-1676					
Ministry of Health					
Dr. Saqib Shahab Chief Medical Health Officer	306-787-3220	306-527-5281		306-787-3237	OCMHO@health.gov.sk.ca
Dr. Julie Kryzanowski Deputy Chief Medical Health Officer	306-520-3779	306-520-3779		306-787-3237	OCMHO@health.gov.sk.ca
Dr. Maureen Anderson Chief Population Health Epidemiologist	306-570-8215	306-570-8215		306-787-3237	OCMHO@health.gov.sk.ca
Isaac Igbaver Provincial Communicable Disease Epidemiologist	306-787-8259			306-787-3237	isaac.igbaver@health.gov.sk.ca
Dr. Bijay Adhikari Manager, Surveillance and Epidemiology	306-787-7225	306-525-5884		306-787-3237	bijay.adhikari@health.gov.sk.ca
Joan Petrie Executive Director, Communications Branch	306-787-8433		306-533-2402		joan.petrie@health.gov.sk.ca
Nicole White Director, Environmental Health	306-787-7128	306-539-5248		306-787-3237	nicole.white@health.gov.sk.ca
Kelsie Dale Food Safety Consultant	306-787-1560			306-787-3237	kelsie.dale@health.gov.sk.ca

Saskatchewan Health Authority					
SASKATCHEWAN Out-of-Hours: 1-306-798-1234 Saskatchewan Health Authority					
Medical Health Officer (on call)					
PHI Clinical Integration Manager					
CD Clinical Integration Manager					
SHA Communications					
RRPL - Saskatchewan Health Authority					
Dr. Jessica Minion Medical Director, Roy Romanow Provincial Laboratory	306-787-8446	306-798-1234	306-450-2959	306-787-1525	jessica.minion@saskhealthauthority.ca
Dr. Ryan McDonald Supervisor - Typing and Surveillances Secondary Contact	306-787-1961	306-798-1234		306-787-1525	ryan.mcdonald@saskhealthauthority.ca
Health Canada					
Dr. Martin Duplessis Director, Bureau of Microbial Hazards	819-639-8820	819-639-8820	819-639-8820		martin.duplessis@hc-sc.gc.ca
Department of Indigenous Services Canada					
Carmen Buschow REHM First Nations Inuit Health Branch	639-318-0143				Carmen.buschow@sac-isc.gc.ca
Dr. Rosemarie Ramsingh Deputy Medical Health Officer	306-807-9855				rosemarie.ramsingh@sac-isc.gc.ca
Dr. Mustafa Andkhoie Regional Epidemiologist Manager, Saskatchewan -FIORP Duty Officer	306-501-5082			306-780-8826	mustafa.andkhoie@sac-isc.gc.ca
Northern Intertribal Health Authority					
Treena Cottingham Environmental Health Advisor	306-953-5028				tcottingham@nitha.com

Public Health Agency of Canada					
General PulseNet Email (include in all correspondence)					nml.pnc-lnm.pnc@phac-aspc.gc.ca
Dr. Kathleen Laberge Program Director, Canadian Field Epidemiology Program (CFEP) Centre for Emergency Preparedness, Emergency Management Branch	514-290-7337	514-290-7337		450-778-8129	kathleen.laberge@phac-aspc.gc.ca
Steven Guercio Director General, Scientific Operations National Microbiology Laboratory	204-784-7545			204-789-2097	steven.guercio@phac-aspc.gc.ca
Dr. Celine Nadon A/Director, Enteric Diseases National Microbiology Laboratory	204-784-7507	204-807-3088	204-807-3088	204-789-5012	celine.nadon@phac-aspc.gc.ca
General PHAC-OMD Email (include in all correspondence)					eclosion.enterique@phac-aspc.gc.ca
April Hexemer A/Director, Outbreak Management Division, PHAC	519-546-6278		519-546-6275	519-826-2984	april.hexemer@phac-aspc.gc.ca
Renee Parisien Director, Public Health Strategic Communications Division	343-572-0855		343-572-0855		renee.parisien@hc-sc.gc.ca

Canadian Food Inspection Agency					
OFFICE OF FOOD SAFETY & RECALL					
Scott Rattray Executive Director, Inspection Support Directorate			613-294-2081		scott.rattray@inspection.gc.ca
Lorraine Haskins Director, Office of Food Safety & Recall		613-773-6425	613-668-7961	613-668-7961	lorraine.haskins@inspection.gc.ca
Kristin Hill A/National Manager, Food Safety Investigations and Recalls	604-404-5968				kristin.hill@inspection.gc.ca
SASKATCHEWAN EMERGENCY # (306) 529-0671 monitored 8 am to 8 pm local time, Monday to Friday and 10 am to 6 pm local time on weekends and statutory holidays. Rotating Actor Regional Recall Coordinator (RRC)	306-529-0671	306-529-0671	306-529-0671	306-780-5177	cfia.wstskimfpost.acia@inspection.gc.ca

Annex 4 – SK FIOIP Post Outbreak Debrief Template

Post-Outbreak Debrief Teleconference

EVENT NAME

DATE TIME

AGENDA

	Agenda Item	Lead
1	Introductions and Roll Call	PHAC – Outbreak Management Division
2	Post-Outbreak Updates <ul style="list-style-type: none"> Epidemiological update 	
3	Other items to be discussed before debrief	
4	Debrief Session <ul style="list-style-type: none"> Outline, scope, purpose and outcomes of debrief Group Discussion, guided by debrief template (see below) Summary of Debrief Recommendations and Next Steps 	Facilitated by:
5	Closing Remarks	PHAC – OMD

	Meeting Participants				
	<input type="checkbox"/> SHA CD:	<input type="checkbox"/> MOH EPI:	<input type="checkbox"/> MOH DPU:	<input type="checkbox"/> ISC:	<input type="checkbox"/> PHAC:
	<input type="checkbox"/> SHA PHI:	<input type="checkbox"/> MOH EHU:	<input type="checkbox"/> MOH OCMHO:	<input type="checkbox"/> AHA:	<input type="checkbox"/> HC:
	<input type="checkbox"/> SHA EPI:	<input type="checkbox"/> SHA MHO:	<input type="checkbox"/> NITHA:	<input type="checkbox"/> CFIA:	<input type="checkbox"/> Other:

Post-Outbreak Debrief/Review

Steps/Issues	Comments (What worked well? What could work better next time?)	Action Items and Recommendations
Initial stage of the outbreak <ul style="list-style-type: none"> • Outbreak detection and surveillance systems (e.g. notification through lab, Panorama, PulseNet) • Verifying the diagnosis through laboratory analysis (serotyping, PFGE, WGS) • Case definitions (define and identify cases) • Notification of partners (MOH, ISC, NITHA, AHA, senior management, MHOs) 		
SK Outbreak Investigation Coordination Committee <i>Initial Assessment</i> <ul style="list-style-type: none"> • Was the assessment call held in a timely manner? Were partners given enough notice? <i>Activation</i> <ul style="list-style-type: none"> • Decision-making and building consensus around activation of SK-OICC? • Were the roles and responsibilities understood? 		

<i>SK-OICC Calls</i> <ul style="list-style-type: none"> Comments on OICC calls (i.e., frequency, structure, attendees). 		
Describe and orient the data in person, place and time <ul style="list-style-type: none"> Were the epi summaries clear, helpful, and distributed in a timely manner? Was the line list easy to understand? 		
Hypothesis generation/evaluation <ul style="list-style-type: none"> Develop hypotheses (interviews, interaction with local/provincial partners) Evaluate hypotheses (CDC collaboration, review of hypothesis generating interviews) Refine hypotheses and carry out additional studies (analytic study methodology, preparation, questionnaire development, implementation and interviewing, analysis) 		
Lab Investigation <ul style="list-style-type: none"> Use of sequencing as part of the investigation Communication of laboratory results 		

<p>Food safety investigation (traceback data, risk assessments, recalls, plant investigation, food/environmental sampling)</p> <ul style="list-style-type: none"> • Was the right information shared? • Was it clear? Timely? • Were the recalls initiated in a timely manner? Were they effective? 		
<p>Communications</p> <p><i>Within SK-OICC:</i></p> <ul style="list-style-type: none"> • Were email updates acceptable and frequent enough? • Communications between MRA and senior management <p><i>Public communications</i></p> <ul style="list-style-type: none"> • Decision-making around public communications • Were communications issued by PHAC and CFIA consistent/coordinated? • Were public communications effective? 		
<p>Public Health Measures</p> <p>(what was done, implementation of control and prevention measures)</p>		

<p>Post-outbreak</p> <p>(declare outbreak over, closing OICC, debrief session, final report, Outbreak Summaries)</p> <ul style="list-style-type: none"> • Decision-making around declaring the outbreak over and closing OICC • Was the debrief session held in a timely manner following the outbreak? 		
<p>Other issues?</p>		

Adapted from PHAC's External Outbreak Debrief Template (March 2018) for OICC.