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ACTION ON WEATHERILL REPORT RECOMMENDATIONS TO STRENGTHEN THE FOOD SAFETY SYSTEM: FINAL REPORT TO CANADIANS

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A MESSAGE FROM THE MINISTER OF HEALTH AND THE MINISTER OF AGRICULTURE AND AGRI-FOOD

Keeping food safe for Canadians is a top priority for our Government.

We work continually with the provincial and territorial governments, the food industry and health and consumer groups to improve Canada's food safety system to protect Canadians. The culture of prevention and responsiveness has contributed to a safer food safety system in Canada.

Following the tragic 2008 listeriosis outbreak caused by contaminated ready-to-eat meat, Prime Minister Stephen Harper appointed Sheila Weatherill to conduct a comprehensive and independent investigation and to make recommendations to strengthen the Canadian food safety system.

The Government of Canada committed to act on all of Ms. Weatherill's recommendations and has been working diligently to implement them. We have made significant investments in Canada's food safety system. At the federal level, the organizations responsible for food safety and for public health are now better equipped to collaborate and coordinate government actions to prevent, detect and respond to potential food safety risks. We are also doing a better job at informing Canadians about the steps they can take to protect themselves from food-related illness. And we are developing a new food safety bill to simplify and modernize our legislation.

When an outbreak threatens or food recalls happen, governments and the food industry must have the capacity to respond quickly and effectively. Our Government has worked with industry leaders and health authorities through open and frank discussions to ensure that our systems are functioning as well as possible to anticipate, prevent and respond to food safety risks and to keep Canadians safe.

We are proud of the work we have done, and we remain committed to ensuring that our food safety system continues to be one of the best in the world.



Leona Aglukkaq, P.C., M.P.
Minister of Health



Gerry Ritz, P.C., M.P.
Minister of Agriculture
and Agri-Food

EXECUTIVE SUMMARY

INTRODUCTION

Listeriosis is a rare but serious foodborne illness. It primarily affects older people, pregnant women and immuno-compromised adults, all of whom are more vulnerable to foodborne illness than the general population. In the summer of 2008, the presence of *Listeria monocytogenes* in ready-to-eat meat caused a listeriosis outbreak, which resulted in the deaths of 23 Canadians.

Immediately after the outbreak, both industry and government began to examine how they could work to prevent such an outbreak in the future, and to minimize harm when food contamination occurs. At the federal level, each of the organizations responsible for food safety and foodborne illness events—the Canadian Food Inspection Agency (CFIA), Health Canada and the Public Health Agency of Canada (PHAC)—implemented an action plan to strengthen its response to outbreaks of foodborne illness.

Because of the serious nature of the listeriosis outbreak, the Government of Canada also asked Ms. Sheila Weatherill to lead an independent investigation into the circumstances of the outbreak and to make recommendations to strengthen the food safety system.

THE WEATHERILL REPORT

In July 2009, the *Report of the Independent Investigator into the 2008 Listeriosis Outbreak* (the Weatherill Report) was submitted to the Government and publicly released.

The Report describes the Canadian food safety system and the responsibilities of industry and government, examines what went wrong, and puts forward a set of recommendations for strengthening the food safety system and for minimizing the risk of a similar outbreak in the future. The Report notes that most of its recommendations are for “swift and significant action in key areas” and encourages the Government to look for “longer-term solutions to the remaining challenges.”¹

The Report relates the chain of events that led to the recall of meat products from a meat processing plant in central Ontario, and assesses how well federal organizations and their food safety partners responded to those events. In September 2009, the Government committed to acting on all of the recommendations of the Weatherill Report.

THE GOVERNMENT RESPONDS

The actions taken to address the Weatherill Report recommendations have had a widespread positive impact on Canada’s food inspection and foodborne illness outbreak response systems.

In addition, the Government is developing a new food safety bill to address the recommendation of the Independent Investigator to modernize and simplify food safety legislation.

¹ *Report of the Independent Investigator into the 2008 Listeriosis Outbreak*, July 2009. Executive Summary, p. v.

The Government has enhanced its overall performance and effectiveness in managing food safety risks, identifying new and emerging food safety issues, and responding to food safety events when they arise. There is heightened awareness of the significance of food safety, and its high priority, at all levels of government.

As detailed below, work has been done to reduce the risk of listeriosis, to improve governance among and within food safety partner organizations, and to improve their ability to prevent foodborne illness, detect pathogens like *Listeria*, enhance surveillance activities that track food safety hazards, and respond effectively when an outbreak of foodborne illness occurs. Changes like these are resulting in better management not only of *Listeria monocytogenes* but also of all food safety hazards.

REDUCING THE RISK OF LISTERIOSIS

Improvements specific to the risks of *Listeria monocytogenes* in ready-to-eat foods include a comprehensive review and revision (2011) of Health Canada's *Listeria* policy, the introduction of tests designed to identify *Listeria monocytogenes* more quickly, and increased surveillance of *Listeria* through the National Enteric Surveillance Program. These and other changes such as information campaigns aimed at high-risk populations have reduced the risk of an outbreak of listeriosis and will ensure that if an outbreak were to occur, it would be more swiftly detected and the outbreak response more quickly initiated.

GOVERNANCE

The work of the Special Committee of Deputy Heads (SCDH), which was formed to oversee the coordination of the implementation of the Weatherill Report recommendations, has improved interaction and collaboration among the organizations responsible for food safety. In addition, communication channels and information-sharing mechanisms are now more extensive as a result of the SCDH. The Committee receives real-time information updates from the Chief Public Health Officer of Canada and the Chief Food Safety Officer for Canada on any potential food safety initiatives and issues. SCDH partners have strengthened their relationships and created a culture in which information is shared among partners so that when a food safety incident occurs, they are in a much better position to take effective action. The SCDH structure provides a platform for ongoing collaboration to enhance the food safety system's ability to anticipate and proactively address emerging issues.

PREVENTION: MINIMIZING THE RISK OF FOODBORNE ILLNESS

Today, Canadians are at a lower risk of exposure to contaminated ready-to-eat meat because the meat processing industry and regulators have worked to enhance environmental testing and food sample testing for the presence of *Listeria monocytogenes*. The Government promised to hire new food safety staff and has hired 170 full-time food safety inspectors, as well as additional health risk assessment staff. Investments in new inspector tools, technology and training have improved efficiency and ensured that inspectors have the necessary resources to provide effective oversight of industry food safety systems. There is also a wider range of possible food safety interventions for the food industry to use through an accelerated approval process for new food additives and technologies of public health relevance. Consumer food safety education campaigns—in particular with the aim of educating and protecting vulnerable populations before and during a foodborne illness outbreak—have reached a large audience through the use of social media, as well as more traditional means of communication.

SURVEILLANCE AND DETECTION: KEEPING TRACK OF FOOD SAFETY HAZARDS

The Government undertook to improve national public health surveillance to better link cases of foodborne illness and more rapidly identify outbreaks. By taking action on the Weatherill Report recommendations on surveillance and detection of foodborne pathogens like *Listeria monocytogenes*, jurisdictions are better able to identify outbreaks more quickly. Innovative, fast and reliable new laboratory procedures and detection methodologies have enabled more rapid detection of hazards in food. Action has also been taken on the development of a network of networks, which will further improve future surveillance and detection activities through the integration of laboratory networks.

RESPONSE TO OUTBREAKS OF FOODBORNE ILLNESS

Improvements to the Foodborne Illness Outbreak Response Protocol (FIORP), the Government's blueprint for handling multi-jurisdictional foodborne illness outbreaks, and the development of the Health Portfolio Foodborne Illness Emergency Response Plan provide greater clarity on how to manage outbreak and emergency situations. The FIORP (2010) has been instrumental in helping the Government answer its commitment to improve coordination among federal and provincial departments and agencies. Roles and responsibilities are clearer, information sharing and communication guidelines are in place and internal surge capacity is identified, should an outbreak occur.

CONCLUSION

As this report describes, the Government of Canada has taken action to implement all of the recommendations made by the Independent Investigator.

The commitment of \$75 million announced in September 2009 demonstrated the Government's intention to move quickly on these recommendations. In Budget 2010, CFIA was allotted an additional \$13 million annually for two years to fund increased inspection capacity for meat and poultry processing facilities. Budget 2011 provided \$100 million over five years to invest in inspector training, tools and technology, and science capacity. The funding will allow CFIA to implement a risk-based and proactive inspection system with enhanced science capacity to support risk-based decision making, and improved information management technology to enable modernization. All of these investments build on the Government's 2008 commitment to invest \$489.5 million over five years in the Food and Consumer Safety Action Plan.

The Government of Canada will continue to review and adjust its food safety standards, policies and operational procedures to ensure that its oversight of food safety remains effective. In our complex and increasingly integrated global economy, with food sources and food production-and-distribution methods in a state of constant evolution, vigilance is required, both of regulators and of industry, to ensure prevention and the effective management of new and emerging risks to food safety.

Clearly, there is always more work to be done. The food safety system requires collaboration among government partners, industry and consumers. Collective effort and sustained action are necessary to be able to respond to new and emerging risks that foodborne illness can pose to Canadians. Strengthening the food safety system is a continuous process to which the Government of Canada is fundamentally committed.



INTRODUCTION

Listeriosis is a rare but serious foodborne illness. It primarily affects older people, pregnant women and immuno-compromised adults, all of whom are more vulnerable to foodborne illness than the general population. In the summer of 2008, the presence of *Listeria monocytogenes* in ready-to-eat (RTE) meat caused a listeriosis outbreak, which resulted in the deaths of 23 Canadians.

Immediately after the outbreak, both industry and government began to examine how they could work to prevent such an outbreak in the future, and how to minimize harm when food contamination occurs.

At the federal level, each of the organizations responsible for food safety and foodborne illness events—the Canadian Food Inspection Agency (CFIA), Health Canada and the Public Health Agency of Canada (PHAC)—implemented an action plan to strengthen its response to outbreaks of foodborne illness.

Because of the serious nature of the listeriosis outbreak, the Government of Canada also asked Ms. Sheila Weatherill to lead an independent investigation into the circumstances of the outbreak and to make recommendations to strengthen the food safety system.

FOOD SAFETY RESPONSIBILITIES

The responsibility for food safety and foodborne illness outbreaks is shared by federal, provincial and territorial governments, industry and consumers:



The food industry is responsible for the production of safe food in compliance with government standards.



Provincial, territorial and local governments enact and enforce food safety laws that apply to food produced and sold within the

borders of each jurisdiction and that complement federal legislation. They engage in activities such as inspection, public health and food safety surveillance, and education and training programs for food handlers.



Consumers and food service providers are responsible for safe food handling and preparation in order to protect themselves and others from foodborne illness.



Health Canada is responsible for establishing food safety policy and standards governing the safety and nutritional quality of all food sold in Canada, as well as for assessing the

effectiveness of the Canadian Food Inspection Agency's (CFIA) food safety activities. Health Canada engages in research and health risk and benefit assessments, as well as pre-market assessments of food additives, novel foods, new technologies and specific food products, and communicates to the public on food safety issues. It also plays a key role in support of CFIA food-safety-incidents management by providing timely health risk assessments.



The Canadian Food Inspection Agency is responsible for enforcing policies and standards set by Health Canada for food sold in Canada, for the delivery of federal food inspection programs, and for verifying industry compliance

with food safety regulations. The Agency also initiates food recalls in collaboration with industry and investigates foods responsible for foodborne illness outbreaks.

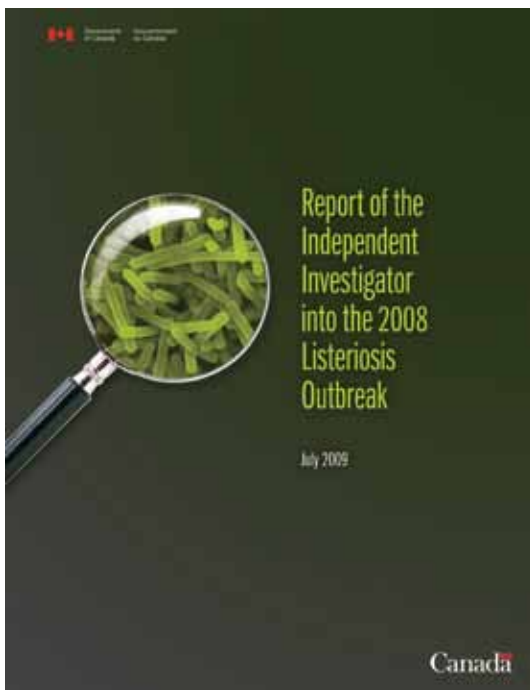


The Public Health Agency of Canada engages in public health surveillance. It also leads the coordination with provincial and territorial public health officials of foodborne illness outbreak investigations

and responses whenever more than one province, territory or country is involved.

THE WEATHERILL REPORT

In July 2009, the *Report of the Independent Investigator into the 2008 Listeriosis Outbreak* (the Weatherill Report) was submitted to the Government and publicly released. The Report describes the Canadian food safety system and the responsibilities of industry and government, examines what went wrong, and puts forward a set of recommendations for strengthening the food safety system and for minimizing the risk of a similar outbreak in the future. The Report notes that most of its recommendations are for “swift and significant action in key areas” and encourages the Government to look for “longer-term solutions to the remaining challenges.”²



The Report relates the chain of events that led to the recall of meat products from a meat processing plant in central Ontario, and assesses how well federal organizations and their food safety partners responded to those events.

The Independent Investigator notes that Canada’s food safety approach is considered among the best

in the world, and emphasizes that Canadians can have confidence in the food safety system. However, she also makes clear that her investigation found circumstances that need to be addressed to better protect Canadians. These are presented in four broad categories:

1. the focus on food safety among senior management in both private and public domains

At the Ontario plant, evidence of recurring contamination was not being monitored through trend analysis. Information about *Listeria* contamination did not always reach the uppermost levels of management at the plant or in government. There were cases of inadequate decision making, and some policies and directives were vague and left open to interpretation. Government approval processes for new food additives and techniques that could contribute to food safety were not prioritized.

2. the state of readiness of various governments

The Investigator perceived a lack of advance planning and preparation, so that governments were not immediately prepared for a multi-jurisdictional response as the outbreak developed. As well, there was a general lack of understanding among government partners of the existing intergovernmental protocol for handling foodborne illness outbreaks, which led to confusion about the division of responsibilities among the various authorities. The lack of emergency surge capacity, inadequate training of temporary replacement staff and insufficient training of food inspectors in new inspection procedures were among the factors cited.

3. the sense of urgency at the commencement of the outbreak

Over one particular critical weekend, both government staff and information were unavailable, causing a delay in decision making. There was a

² *Report of the Independent Investigator into the 2008 Listeriosis Outbreak*, July 2009. Executive Summary, p. v.

lack of consensus as to the appropriate time to warn the public about potentially harmful foods. The activation of emergency operations centres was late in coming, and direction from authorities at the national level was noticeably lacking.

4. national communications with the public

Evidence gathered from polling, as well as from personal anecdotes, showed that communications about the outbreak did not provide the information Canadians needed. “There was near-unanimous agreement,” the Investigator points out, “that Canadians were confused following news of the food recalls.”³ It was concluded that Canadians want clear, simple information on what is happening during an outbreak and on how to protect themselves from foodborne illness.

The Independent Investigator acknowledges the complexity of the undertaking and the intensity of the pressure to deal with the outbreak while responding to public concerns. She points out that food safety risks have become greater with the advent of large-scale farming and food production, and global food markets. She also notes that listeriosis is a difficult infection to detect, resembling the flu at onset and requiring time-consuming laboratory testing to analyze and identify.

The Investigator also acknowledges that a great deal of hard work and dedication was exerted on finding the source of the illness, making the contamination link from humans back to the foods, removing the products from the market and managing communication of the event to the public. In addition, she points out that by 2009, actions were already under way to correct problems that were identified immediately after the outbreak.

Nevertheless, the Investigator calls for further action in specific areas: the culture of food processing companies; the Government’s rules and

requirements for food safety; the Government’s capacity to manage multi-jurisdictional foodborne outbreaks; and the relationships among, and defined responsibilities of, all levels of government. She further suggests that, given the status of foodborne illness as the largest class of emerging infectious disease in the country, the Canadian government ought to emphatically commit to the safety of food as one of its top priorities.

Finally, the Investigator notes that, while they are not the focus of the review, issues of legislation and regulation, as well as governance, should be acted upon in order to modernize and reform the food safety system.

THE GOVERNMENT RESPONDS

In September 2009, the Government announced its agreement to act on all of the recommendations of the Weatherill Report. The Clerk of the Privy Council asked the Deputy Minister of Agriculture and Agri-Food Canada (AAFC) to take on an oversight role in the coordination of actions by CFIA, Health Canada and PHAC in response to the recommendations of the Weatherill Report. The Special Committee of Deputy Heads (SCDH) was formed to ensure that all food safety partners are better positioned to share information and provide a more cohesive and forward-looking approach to food safety. The SCDH has overseen action taken toward the implementation of all 57 recommendations and has kept Canadians informed on progress through a series of three interim reports posted on the Food Safety Portal.

This final report describes the action taken since September 2009 with specific reference to three priority areas—**reducing food safety risks, enhancing surveillance and early detection, and improving emergency response.**

³ *Report of the Independent Investigator into the 2008 Listeriosis Outbreak*, July 2009. Executive Summary, p. v.



REDUCING FOOD SAFETY RISKS

The Independent Investigator's first subject of concern is an "insufficient focus on food safety among senior management in both the public and private domains."⁴ The Weatherill Report finds that contamination trends were not being monitored properly, that approval of new food safety interventions were not prioritized, and that the information flow upward to senior ranks, both public and private, was suboptimal. As well, new food safety programs were slow to be implemented, and the vagueness of some policies and directives left them open to interpretation.

The Government has undertaken a complete and thorough response to the Investigator's concerns, beginning with the comprehensive review and revision by Health Canada of its *Listeria* policy. As well, action has been taken to implement a new process to prioritize the pre-market approval of food safety interventions, such as certain food additives. Improvements have also been made to assessment procedures with respect to evidence of contamination and to the risk posed to the consumer. A major review of the meat inspection system has also been conducted. Manuals, guidelines, regulations and policies that govern food processing and food safety in Canada have been reassessed and updated. Finally, special attention has been given to improving the way in which the Government and its partners communicate with Canadians about foodborne illness outbreaks.

⁴ *Report of the Independent Investigator into the 2008 Listeriosis Outbreak*, July 2009. Executive Summary, p. v.



CULTURE OF CONTINUOUS IMPROVEMENT:

“One of the tangible results of the recommendations is that they collectively impress on all stakeholders involved in food safety the need to adopt a culture of continuous improvement. The adoption of this culture is essential as the world of food safety becomes more integrated, and interdependencies in production, processing, retail and consumption become more pronounced.”

Dr. Brian Evans, Chief Food Safety Officer for Canada

POLICIES AND PROCEDURES

HEALTH CANADA'S LISTERIA POLICY REVISION

After the 2008 listeriosis outbreak linked to processed meat, Health Canada began a review to update its policy “*Listeria monocytogenes* in Ready-to-Eat (RTE) Foods” using the latest scientific information available.

This policy is used by the food industry and CFIA as a guide to action that can be taken to reduce the risk of *Listeria monocytogenes* contamination in all RTE foods. It enhances the ability of food manufacturers to identify and reduce *Listeria* contamination of food processing environments and finished food products. It also provides guidance, not only to industry regarding the verification and control of *Listeria* in RTE foods, but also to regulatory authorities regarding oversight and compliance activities for RTE foods contaminated with *Listeria*. In addition, the policy is applicable to all RTE foods, including meat, poultry, fish, fruits and vegetables, and dairy products.

The 2011 policy includes new end-product compliance criteria that are similar to the international Codex Alimentarius Commission standards; categories of RTE foods according to risk; a more detailed compliance-action decision tree; advice on including an environmental monitoring program in all processing plants; and encouragement to use treatments that inhibit or eliminate the growth of *Listeria monocytogenes*.

The policy also contains an increased focus on outreach to the federal/provincial/territorial (FPT) community to increase awareness of the risks of foodborne listeriosis and to provide guidance on how to reduce the risks in institutions where the more vulnerable may be exposed.

Interested parties were consulted about the policy in spring 2010, and industry began to proactively improve food manufacturing operations with the help of Health Canada's updated guidance. The final policy was published on Health Canada's website and has been in effect since April 1, 2011. The guidance provided by Health Canada in the revised policy will continue to strengthen the Canadian food safety system and reduce the risk of outbreaks similar to the 2008 event.

In addition, Health Canada has updated its list of recommended *Listeria* testing methods available to industry. Thirteen methods for *Listeria* have been validated and maintained in the *Compendium of Analytical Methods* on Health Canada's website in April 2011, at the same time that the revised *Listeria* policy came into effect. This provides industry with a wide range of validated testing methods to choose from.

Since the *Listeria* policy came into effect in April 2011, CFIA has continued to work with industry to oversee its full implementation. The Agency sent information letters to firms producing RTE foods to outline the key elements of the *Listeria* policy

and to encourage food business operators to conduct a full review of the policy to make sure that its key components and recommended food safety practices were well understood. These notices were later posted on CFIA's website.

Information sessions were arranged with industry to raise awareness of the revised *Listeria* policy and to encourage industry adoption of the food safety practices it describes. Further sessions are planned to provide ongoing support to the revised policy.

UPDATING CFIA'S MEAT HYGIENE MANUAL OF PROCEDURES

CFIA has also updated its *Meat Hygiene Manual of Procedures* to reflect the revisions to Health Canada's *Listeria* policy. The Manual was prepared as a reference document for CFIA inspectors and establishments in the Canadian meat hygiene program, principally the meat processing industry.

The Manual references policies related to importing, exporting and interprovincial meat products trading, as well as those (such as the present policy on *Listeria monocytogenes*) that concern the preparation of meat products in establishments licensed under the 1990 *Meat Inspection Act and Regulations*.

The adjustments to the Manual provide greater clarity with respect to existing processes, and introduce risk-based sampling, as was specified in the Weatherill Report. Sampling plans will continue to be updated and revised as required, based on product risk and the establishment's risk profile, in accordance with the *Listeria* policy.

To maintain the food industry's awareness of significant changes to the Manual, an email subscription service is available on the CFIA website that alerts subscribers whenever changes are made.

CFIA has also modified inspection activities for other high-risk RTE foods, including dairy, fish, and raw and fresh-cut fruits and vegetables that are minimally processed. In addition to the current level of end-product sampling, CFIA is planning increased inspections, including follow-up to *Listeria* findings, as well as environmental monitoring programs to verify the effectiveness of industry controls.

HEALTH CANADA LISTERIA POLICY

The updated policy includes:

- 1) new criteria for compliance, based on the possible health risks associated with certain foods, and the likelihood that they could contain levels of bacteria capable of causing illness;
- 2) updated definitions of which ready-to-eat foods can/cannot support the growth of *Listeria monocytogenes*;
- 3) specific guidance about the decision-making process when positive samples are found, including more details related to sampling, the appropriate moment to notify regulatory authorities, record keeping and specific processes and steps to be followed;
- 4) a recommendation that an environmental monitoring program be established in all processing plants that produce ready-to-eat foods; and
- 5) recommendations encouraging the use of post-processing treatments and growth inhibitors.



CFIA MANUALS AND POLICIES

In April 2011, CFIA introduced streamlined business processes and began developing a framework and additional business strategies to facilitate the routine updating of its manuals, which include details on regulations, directives and food safety programs.

Imported-food surveillance activities have also been reviewed and are being updated under the Government's Food and Consumer Safety Action Plan. The Plan is a series of initiatives to modernize and strengthen Canada's safety system for food, health and consumer products, and to better support the collective responsibilities that government, industry and consumers have to ensure product safety.

As a result of the routine updating of manuals, regulated parties and inspectors have access to better guidance on the latest directives, policies and regulations. These regular updates also promote uniformity and consistency in the application of directives, policies and regulations, and are expected to increase industry compliance rates.



NEW ENVIRONMENTAL MONITORING REQUIREMENTS

As part of food inspection, environmental monitoring is done to ensure that harmful bacteria are not present in the food processing environment. This

involves the sampling (swabbing) and testing of facility surfaces and areas. In February 2009, CFIA published an amendment to the *Listeria* directive that requires environmental monitoring of food contact surfaces to detect the presence of *Listeria* in federally registered meat establishments.

CFIA is also increasing its capacity for trend analysis, including through developing a prototype

system to monitor *Listeria monocytogenes* test results, both from industry and from CFIA testing programs and inspections. CFIA will collect and analyze data and test results from processing plants to better identify trends and areas of concern in establishments where risks are highest.

This improved risk-based approach to managing sampling plans, determining sampling frequencies and analyzing test results will enable CFIA to focus its efforts and resources on those products and establishments with the highest level of risk. Beginning in 2011, the frequency of required environmental sampling is being adjusted in establishments to match the level of risk for each product. CFIA will continue to identify establishments producing lower-risk products and decrease the level of sampling required for these establishments, while increasing sampling for establishments producing higher-risk products. Trend analysis of test results for each establishment will also enable inspectors to identify recurring patterns that may indicate compliance issues or a persistent problem that requires the attention of inspectors.

SAMPLING PLANS:

The Canadian Food Inspection Agency has taken a proactive approach to reducing exposure to—and consequently illness related to—*Listeria monocytogenes*, by revising monitoring programs for ready-to-eat (RTE) meat and food contact surfaces. These revisions will allow the Agency to optimize its resources by adjusting sampling frequency per individual RTE establishment, based on risk factors such as the type of product and compliance history. The Agency recognizes that more can and will be done to improve food safety standards, programs and operational procedures. Trend-analysis work will provide the Agency with the data and tools required to take a proactive, risk-based approach to managing and responding to constantly changing food safety risks. This work will enable governments to maintain consistency across food safety standards, programs, policies and operational procedures.

FOOD SAFETY ENHANCEMENT PROGRAM MANUAL

CFIA administers the Food Safety Enhancement Program (FSEP), whose main objective is to ensure that the conditions of food production result in safe food. The Program guides industry's implementation of risk-based food safety systems, as well as CFIA's inspection activities. Mandatory requirements include monitoring and verifying manufacturing processes, maintaining food safety records and updating the food safety system regularly.

The *Food Safety Enhancement Program Manual* has been updated to specify the records-maintenance standards that CFIA expects food processors to meet. Food processors are required to include all standard operating procedures in their food safety management system. In the event of a recall, regulated parties must provide the distribution records of the recalled products to CFIA in a format that is readily accessible and legible.

The revised FSEP Manual also details the requirements to be met by senior management in food processing establishments to ensure that the establishment complies with all regulatory and CFIA program requirements, and that its food safety system meets all the Manual's requirements.

DISTRIBUTION INFORMATION AND RECALL DECISIONS

CFIA has promoted better sharing of distribution and recall information during various stages of recall activities by encouraging processors to allow for electronic accessibility to distribution records in unlocked formats in order to assist in potential product recalls. The Agency has established a formal protocol to ensure that timely and consistent information is provided to provincial/territorial or local public health organizations to help with post-recall verification activities. A standardized form has also been developed to be used by the distribution industry for providing information related to a product recall.

CFIA has developed the *Food Investigation and Response Manual* (FIRM) to provide guidance to CFIA staff conducting food safety investigations and recalls. The FIRM consists of procedures and templates to guide inspectors in the collecting and sharing of information. Among these, for example, is a template for sharing information with provinces and territories during post-recall verification activities. The FIRM also includes a revised checklist for gathering implementation information and verifying the establishment's recall plan.

Taken together, these measures improve the quality, strength and consistency of information used in recall decisions and permit the affected industry to act quickly to mitigate the identified risk. Better sharing of distribution information assists in determining quickly the magnitude of the foodborne outbreak and whether vulnerable populations may have been exposed to the product. It also contributes to timely identification of the source of a foodborne illness and the removal of contaminated food from the marketplace. Finally, in the case of a product recall, improved sharing of distribution and recall information helps CFIA and its regulatory partners verify that all contaminated products have been removed from store shelves.

COMPLIANCE AND ENFORCEMENT OPERATIONAL POLICY

CFIA has also revised its Compliance and Enforcement Operational Policy to ensure consistency in enforcement practices across the country. The updated policy was posted on the Agency's website on February 9, 2011.

The Compliance and Enforcement Operational Policy outlines CFIA's approach to its compliance management activities, which include helping

regulated parties understand their obligation to comply with legislative requirements, monitoring compliance and performing inspection activities. It also itemizes the various tools available to CFIA for responding to non-compliance of food safety legislation.

When CFIA identifies non-compliance, it can, for example:

- refuse entry of shipments into Canada;
- issue warnings or penalties for non-compliance;
- suspend or cancel licences, registrations or permits;
- recommend to the Public Prosecution Service of Canada that violators be prosecuted; and
- seize and detain shipments and products.

The Policy is supported by a suite of strategies that provide guidance on the enforcement actions available under the various pieces of legislation that CFIA enforces.

The updates to the Policy result in greater consistency and effectiveness of compliance and enforcement actions across the country, as well as increased transparency with respect to the roles and responsibilities of the CFIA officials who enforce and administer food safety legislation. Canadians can be confident that CFIA has in place a reliable and credible food inspection system on which they can depend for safe food and consumer protection. Canadians can also be confident that contraventions of the law will be met with meaningful, predictable and appropriate compliance and enforcement action.

CFIA continues to work with consumers and industry on compliance and enforcement issues while practising fairness, impartiality and consistency.

FOOD SAFETY RESEARCH

INVESTIGATING NEW TECHNOLOGIES

Technology is ever evolving, and today's cutting-edge research could lead to tomorrow's next food safety breakthrough. To evaluate the potential of new food safety technologies, Health Canada actively conducts research to identify those that could be of benefit to Canadians.

In particular, Health Canada scientists have been conducting research to examine the effects of high-pressure processing on both *Listeria* and pathogenic *E. coli*. The goal is to understand how this technology affects the bacteria in hopes of identifying where it could be most useful (for specific foods or under certain conditions in controlling these bacteria).

GUELPH FOOD RESEARCH FACILITY

On November 9, 2010, Agriculture and Agri-Food Canada (AAFC) opened its upgraded pilot plant research facility at its Guelph Food Research Centre. Through funding of \$1.1 million from an accelerated Economic Action Plan investment program to modernize federal laboratories, the existing plant became the most advanced Level II food processing containment facility in Canada and now meets higher biosecurity requirements for handling the most serious pathogens.



The facility is unique in Canada in that it allows scientists to use pilot scale equipment in its state-of-the-art lab to test drive and validate some of the latest food safety technologies. Three special containment units, called BioBubbles, are permitting scientists to work with some of the most serious threats to food safety such as *E. coli*, *Listeria* and *Salmonella* in a very safe environment. Some of the emerging food safety technologies being investigated in the new laboratory involve the treatment of those pathogens with ultra-high pressure, ultraviolet light, microwaves, ultrasounds and ozone.

AAFC scientists and their university partners work on collaborative projects with industry to help them develop and adopt innovative new food processing techniques.

The lab also works with the Canadian Food Inspection Agency to validate the safety of food processing techniques and test innovative new processes. Collaborative research is planned with the Public Health Agency of Canada and Health Canada to address public health and regulatory issues related to new food products and processes.

IMPROVED DECISION-MAKING PROCESSES

FASTER APPROVALS

Health Canada is responsible for approving food safety interventions with proven health benefits, such as the use of food additives that reduce the growth of pathogens like *Listeria*.

Health Canada has finalized a policy document, *Priority Scheduling and Expedited Handling of Submissions that have the Capacity to Enhance*

Food Safety, which guides industry with respect to those applications that warrant such expedited reviews at the submission stage. The document was posted on Health Canada's website in January 2011. The specific eligibility criteria were developed in order to identify those applications that merit priority handling. The initial response from industry has been positive, and Health Canada has started to receive submissions requesting priority handling.

In addition, Health Canada is assessing other regulatory strategies that would help shorten approval timelines for safe additives, as well as for other food safety interventions. For example, Health Canada has initiated a streamlined approach to publishing its intent to amend regulations to allow the use of certain food additives. The new approach is to post web consultations of intended amendments and notify trading partners while the drafting of the regulations is under way (instead of publishing such intents in the *Canada Gazette*, Part I). Other areas for regulatory modernization are also being explored. These improvements will result in more food safety interventions being available to industry sooner, which will in turn contribute to the management and mitigation of food safety risks.



FOOD ADDITIVES AND OTHER FOOD SAFETY INTERVENTIONS WITH FOOD SAFETY BENEFITS

Food additives are used for a variety of reasons. Some make foods more attractive or improve their texture, but many have important uses related to ensuring the safety of foods.

Following the recommendations in the Weatherill Report, Health Canada launched a new policy that allows for the prioritized review of food additives and other food safety interventions that show promise of providing a food safety benefit. These interventions will now be reviewed on a priority basis, rather than on a first-come, first-served basis.

This process does not change the requirement that companies demonstrate the safety of an intervention, but it may significantly reduce the time it takes to have them assessed.

The compounds described below are examples of additives that have a food safety and health benefit. Although these were evaluated before implementing the new policy, they serve as examples of the types of food additives that would be eligible for priority handling under the new policy.

Sodium Acetate and Sodium Diacetate

Since 2008, sodium acetate and sodium diacetate have been available in Canada for use as antimicrobial preservatives in meat and poultry products. When added to processed ready-to-eat foods such as sausages and deli meat, they help to limit the growth of *Listeria monocytogenes*. Both have been proven safe.

Carnobacterium maltaromaticum

An antibacterial preservative, *Carnobacterium maltaromaticum*, was approved for sale in Canada in December 2010. It is effective against *Listeria monocytogenes* in specific ready-to-eat, vacuum-packed meat and poultry products, including hot dogs, sliced cooked ham, sliced roast beef and sliced cooked turkey.

WEIGHT-OF-EVIDENCE GUIDELINES

In response to the findings of the Independent Investigator and the lessons learned from the outbreak, Health Canada led the development of a guidance document that would help decision makers to assess the quality and strength of evidence accumulated during foodborne outbreak investigations.⁵ An interdepartmental team quickly began to develop a systematic approach to decision making, using the overall weight of evidence to

determine appropriate risk management actions during foodborne illness outbreaks.

The document suggests factors to consider and provides guidance on the assigning of weight when assessing evidence gathered as a result of microbiological, epidemiological and food safety investigations. It also defines the type and weight of evidence sufficient to take action, thus providing a framework to facilitate timely and appropriate actions. The document was intended primarily

⁵ The guidance document was published in June 2011 and is publicly available from: Publications, Health Canada, Ottawa, Ontario K1A 0K9; Tel: 613-954-5995; Email: info@hc-sc.gc.ca.

for a federal audience, but since decision makers at all levels of government would need to consider similar criteria and weighting, FPT governments and selected international partners were consulted during the drafting process.

The document is now being used in foodborne illness outbreak investigations. The systematic approach it prescribes is expected to improve emergency preparedness and the response of regulatory authorities involved in these investigations.



WEIGHT-OF-EVIDENCE WORK

“Investigations into foodborne illness outbreaks are complex. Investigators are often unable to directly link an outbreak to a food source, or we may have suspicions about a food source that can’t be scientifically confirmed.

In an effort to be more transparent and to have a consistent approach to managing these situations, investigators have developed a new weight-of-evidence guidance document—a pioneering document among national food safety regulators—about the factors to consider when investigating a possible foodborne outbreak. The document considers the many factors that play a role in an investigation and provides guidance on how the strength of the evidence may be used to determine the food source for an outbreak.

The document was peer-reviewed both nationally and internationally, and will be published in a scientific journal so that other regulators can take advantage of the work done in Canada.

There are three types of evidence that feed the risk assessment process: microbiological evidence (specific details about the bacteria involved), epidemiological evidence (information about the cases of illness, including what the patient ate and when) and trace-back/trace-forward evidence (information from an investigation of the distribution of the food).

Conclusions stemming from the investigation depend on the strength of these various types of evidence. For example, if bacteria are found in an opened package of food, that evidence is not as strong as it would be if the bacteria were found in a closed package, because of the possibility of cross-contamination when the customer originally opened the package.

Ultimately, a decision needs to be made based on the total “weight of evidence” in each case, and this guidance document provides the decision-making framework so that those decisions are made consistently and in the best interests of Canadians.”

Dr. Jeff Farber, Director, Bureau of Microbial Hazards, Health Canada



HEALTH RISK ASSESSMENTS

Health Canada's Food Directorate conducts food-related human health risk assessments for CFIA so that it can make decisions on food recalls as part of its responsibility

for enforcing food-related standards. These assessments involve determining if the presence of a certain substance or micro-organism in food (e.g. chemical contaminant, natural toxin, allergen, unapproved food additive, bacteria, virus or parasite) poses a health risk to consumers. If it is found that a substance or micro-organism in food poses a human health risk, risk management actions are taken to reduce or possibly eliminate any risk that is posed to people who consume the food in question.

The Weatherill Report notes some limitations in Health Canada's capacity to carry out human health risk assessments in a timely way, particularly during the outbreak of 2008. The Department has hired additional specialized experts, and continues to strengthen its capacity with risk assessment expertise by training additional health-risk-assessment staff in order to sustain its capacity to provide 24/7 coverage and to meet a surge in demand in the case of a national foodborne illness event. As well, the Department has enhanced the procedures used to provide health risk assessment in support of CFIA during its food safety investigations, including establishing service standard times for health-risk-assessment responses. The quality of risk assessments is also being enhanced through

improved methodologies in line with recent scientific developments. As a result, Health Canada is able to continually and rapidly respond to the growing number of requests for health risk assessments.

INSPECTORS AND THEIR TASKS

Each federally registered meat processing plant must have a food safety plan. The Government's Compliance Verification System (CVS) sets out the procedures to be used by inspectors to verify the design and implementation of such plans. The Weatherill Report notes that the CVS is well regarded and broadly supported in the field, but that improvements to its design, planning and implementation are needed.

In response, the Government of Canada conducted a comprehensive review of the CVS. The lessons learned from this review are helping CFIA to align resources with workload requirements. The *Comprehensive Review of the Compliance Verification System* report is available through the Government's Food Safety Portal website (www.foodsafety.gc.ca) and can also be found on the CFIA website at www.inspection.gc.ca/english/fssa/transp/prog/compe.shtml.

REVIEW OF THE COMPLIANCE VERIFICATION SYSTEM

The CVS identifies specific inspection tasks or testing requirements that must be carried out by inspectors when conducting compliance verification. An Expert Panel reviewed the technical requirements of the CVS, including the details of the CVS tasks, the frequency of task assignment, and the amount of time allocated to each task. The Panel concluded that the CVS provides an excellent system overall for documenting the inspector's verification activities, and that the CVS tasks are well-aligned with

CFIA's food safety regulations. At the same time, these reviews have been instrumental in providing CFIA with the information to make significant enhancements to the food inspection system.

CFIA worked with the Public Service Alliance of Canada's Agriculture Union (the union representing federal meat inspectors) to conduct an assessment of the CVS implementation at the field level. The assessment indicated that front-line inspection staff recognized the improvement that the CVS represents over past inspection approaches, namely that it increases consistency and provides the level of detail required by inspectors to conduct their verification activities. Areas identified for examination and improvement included inspector training, information management and technology, and the management of workloads. The recommendations made by the Expert Panel and by the front-line assessment report are now being applied to the CVS.

Additionally, an internal audit of the CVS was conducted to provide assurance that CFIA's meat inspection activities are compliant with the *Meat Hygiene Manual of Procedures*. The audit report has been posted on the CFIA website.

A third-party review of CFIA's calculation of the resources required by the Agency to deliver the CVS in federally registered meat establishments was concluded in October 2010. The Government made funds available to hire 170 full-time food safety inspectors, and as of January 2011, CFIA had hired all 170 inspectors. This investment fulfills the requirement for additional inspection resources in federally registered meat establishments, including for the delivery of the CVS tasks.

The review of the CVS technical requirements recommended increased flexibility for inspectors so

that they could react more effectively to non-routine and emergency situations. The CVS now provides greater freedom for inspectors to pursue any food safety situation they might encounter during the inspection process. The CVS procedures have been strengthened to ensure that the inspector is aware of current conditions and processes, and any areas of concern that may have an impact on food safety.

In addition, streamlined human resource processes and a national recruitment strategy have been implemented to support inspection managers and supervisors. These developments will allow inspection managers and supervisors more time to oversee inspection staff.



TRAINING PLAN

The National Training Plan for Meat Processing Inspectors has been developed, based on an assessment of training needs. This plan addresses required inspection competencies and skills, ensuring

that inspectors have the skills to effectively deliver inspection programs.

A key course in the Agency's new core training program was evaluated four months after the training was delivered to assess desired behaviours in the workplace. The evaluation confirmed that training participants perceived gains in their knowledge and skills. In addition, all supervisors indicated that staff members are more confident that they understand laboratory test results, that they can provide information to industry, and that they can interact and discuss issues more effectively with other inspectors.

All meat inspectors hired since 2009 will have been trained by March 31, 2012, and all new meat processing inspectors are slated to complete the same training. Training sessions are tracked to ensure that inspection staff have completed all technical courses.

TRAINING AND MODERN TECHNOLOGIES:

New core training sessions ensure that inspectors have the required skills to effectively deliver inspection programs. The National Training Plan for Meat Processing Inspectors outlines a 29-week series of training modules consisting of in-class instruction, coaching/mentoring, self-study and e-learning.

This training is being delivered both in-class and online to make delivery more efficient and standard across Canadian Food Inspection Agency (CFIA) regions. CFIA has made a significant investment in information technology that will allow inspection staff to access the CFIA network remotely and to benefit from e-learning modules. E-learning products will offer CFIA inspection staff a flexible way to update and maintain knowledge and skill sets. Thus, inspection staff across the country need not wait until formal courses can be delivered to a specific area. E-learning will support national standardization in knowledge and skill development, resulting in a better-trained workforce that applies regulations in a consistent manner from coast to coast.



BETTER EQUIPMENT

Providing modern technologies to inspectors has increased their efficiency and improved their ability to document and share their findings. Over 950 computers have

been purchased, including 446 laptops for mobile workers. As well, the number of sites connected to the CFIA network was increased from 385 to 436. In addition, a pilot project completed on April 1, 2010, assessed whether inspectors—particularly those in remote areas—could benefit from wireless cellular network technology that would allow them secure access to the CFIA computer network applications. The Agency is now in the process of distributing wireless cellular network devices to provide high-speed laptop connectivity from virtually any location. Connecting the inspector, rather than connecting a work location, will allow inspectors access to the CFIA network wherever they are—in the plant, between plants or elsewhere. This allows inspectors real-time access to CFIA files and applications to support decision making and improve communication. Better and faster information sharing has a direct effect on the Agency's ability to identify and respond to foodborne illness outbreaks.

CONSUMER FOOD SAFETY EDUCATION AND INFORMATION

Consumer food safety education plays an important role in preventing foodborne illness. According to recent public opinion research, Canadians generally believe that it is everyone's responsibility to ensure a safe food production system⁶ and they do look to the Government for information on food safety.⁷

The Government has taken a number of steps to provide Canadians, particularly those at a higher risk, with the information and tools they need to protect themselves from a potential foodborne illness.

FOOD SAFETY PORTAL AND SOCIAL MEDIA TOOLS

With the rise of social and electronic media use, Canadians expect to get information more quickly and efficiently. In February 2010, the Government of Canada launched www.foodsafety.gc.ca, an online one-stop food safety portal that provides Canadians with access to important health and food safety information through social media tools, including RSS feeds, widgets, Facebook, YouTube and mobile phone applications.



The Portal provides a broad range of food safety information from CFIA, Health Canada and PHAC, including:

- news on illness outbreaks, food recalls and allergy alerts;
- safe food handling and preparation tips;
- food label information; and
- foodborne illness facts.

Through the web Portal, Canadians can report a food safety concern, ask a question, or sign up to receive food recall alerts by email. The website features videos on safe food handling and an interactive guide to purchasing and preparing food safely at the grocery store and at home. Furthermore, since everyone plays a role in food safety, it describes how consumers, government and industry can work together to keep our food safe.

From the Food Safety Portal, Canadians can link to the Healthy Canadians Facebook page, a hub for health-related campaigns that provides a range of information and tips, including on food safety. Web content and web interactive tools were also developed to help all consumers learn about safe food handling practices in the home and in the grocery store.



⁶ *Food Safety: Canadians' Awareness, Attitudes and Behaviours*. Léger Marketing, July 2011, p. 6.

⁷ *Ibid.* p. 43.

FOOD RECALLS

A food recall is an action by a manufacturer, importer, distributor or retailer to remove unsafe food products from the market to help protect the public. CFIA manages about 235 food recalls each year.

CFIA, Health Canada and PHAC use Twitter to broadcast and “re-tweet” information on food safety issues and recalls. There are currently over 18,500 combined followers of the Health Canada, CFIA and PHAC Twitter accounts, including representatives from the media, health organizations, consumer groups and cooking/food allergy bloggers. In February 2010, CFIA developed an RSS feed and a food recall widget to automate the distribution of food recall and allergy alert notices directly to subscribers. In addition, a Government of Canada Recalls and Safety Alerts web-based mobile application was launched in late 2010 to publish food safety warnings.



In February 2011, CFIA began issuing allergy alerts to email notification service subscribers. This service is part of CFIA’s ongoing commitment to deliver timely recall information to Canadians so that they can make informed food choices. CFIA now has 47,500 subscribers to the recall-and-allergy-alert email notification service.

CFIA CONSUMER CENTRE

As recommended by the Weatherill Report, CFIA has enhanced its public profile to increase awareness of the Agency’s mandate.

From the Food Safety Portal, visitors can link to the Consumer Centre section of the CFIA website. This section was expanded in November 2009 in order to explain the roles that consumers, government and industry play in food safety, and to provide more information on important food safety issues.

By enhancing CFIA’s public profile, Canadians are better informed of the Agency’s responsibilities, operational procedures and partnerships. In addition, the Agency can now quickly and efficiently provide information to Canadians on a wide range of issues, including food safety risks and the roles of industry and consumers in keeping food safe and reducing the risk of foodborne illness. As a result, Canadians can feel more confident in the safety of their food.

HEALTH CANADA: REACHING OUT TO AT-RISK CANADIANS

While anyone can get sick from bacteria in food, certain groups are at a much higher risk of serious, life-threatening complications. It is particularly important that older adults, pregnant women and those with compromised immune systems be aware of food safety risks and the steps they can take to protect themselves.

In March 2010, Health Canada launched the three-year outreach campaign, Safe Food Handling, aimed at those populations that are at greater risk of complications from foodborne illness. The campaign is tailored specifically for each audience and is designed to provide them with the information they need to protect themselves.

Educational resources were developed for each at-risk group and were made available in both printed and electronic formats. Outreach activities focused on raising awareness of the safe food handling messages through radio, print and web content, and interactive tools. Magazine advertising alone reached more than 12 million consumers.

Activities included:

- articles and print ads in 12 targeted publications and magazines;
- distribution of booklets and posters to health professionals, family doctors, disease associations and clinics;
- web advertising on health websites;
- a strategic alliance with Thyme Maternity for point-of-purchase distribution of more

than 190,000 booklets targeted to pregnant women, and tailored information in their in-store publication; and

- insertion of 400,000 brochures, targeted to adults over 60, in Old Age Security mailings and radio ads on stations favoured by an older demographic.

Videos on safe food handling for pregnant women, people over 60 and people with weakened immune systems are available on Health Canada's YouTube channel.

The objective of Health Canada's risk communication and marketing strategies is to ensure that vulnerable populations and other Canadians have the information they need to make informed decisions about their health. In these communication efforts, Health Canada has now developed clearer communications with the Canadian public about listeriosis, especially for at-risk populations. Preliminary assessment of these efforts indicates that communication has been effective and that consumers are better equipped to take preventive action.



RAISING AWARENESS OF CAREGIVERS

Many Canadians at greatest risk from listeriosis do not cook their own food because they live in long-term care facilities, are being treated in hospitals, or have services or family members that prepare food for them so that they can live in their own homes. In such cases, it is not enough to raise the awareness of those who are at greater risk (older adults, pregnant women and the immuno-compromised). Their caregivers also need to be aware of the precautions they should take.

With this goal in mind, FPT governments have worked together to develop an important new resource through the Council of Chief Medical Officers of Health. The document, *Prevention of Listeriosis: Considerations for Development of Public Health Messages*, was made available to the provinces and territories in July 2010 to provide advice on creating communication messages within each jurisdiction. This document offers basic information on listeriosis, and provides prevention advice for the general public, for vulnerable populations and for food service providers serving food to these populations.

COMMUNICATION – MANAGING RISKS:

“Communication during a food safety incident is becoming increasingly habitual as risks are managed and conveyed. While Ms. Weatherill’s recommendations have helped establish the governance and the mechanisms facilitating the communication, the benefits of timely and targeted communication when managing an outbreak go beyond managing the risk itself; they include the creation of a culture of understanding about food safety. Unrelenting effort is required to effectively inform the public about persistent and emerging risks and the action being taken to address them.”

Dr. Brian Evans, Chief Food Safety Officer for Canada

CFIA: TRANSPARENCY INITIATIVES

The Government of Canada is committed to providing consumers with information on the enforcement actions being taken to ensure that the food industry meets federal food safety requirements.

On March 16, 2011, CFIA announced that it would begin publishing information about the compliance and enforcement activities it undertakes to protect the safety of the Canadian food supply, as well as to protect animal and plant health.

On its website, CFIA now publishes information on:

- food imports that have been refused entry into Canada;
- federally registered food establishments whose licences have been suspended, cancelled or reinstated;
- organics certificates that have been revoked;
- notices of violations with warnings and penalties, including identifying repeat offenders of animal transport regulations;
- prosecution bulletins; and
- food products that have been seized, detained or disposed of.

The Weatherill Report recommends that CFIA disclose to the public and food safety partners the results of investigations and corrective actions taken where human deaths or serious illnesses occur. In response, the Agency has gone beyond this recommendation to give much more information to Canadians.

When a serious foodborne illness is traced back to an Agency-regulated food production establishment, CFIA uses its website to ensure that Canadians continue to be informed once an investigation into the event has been concluded. Investigation reports posted online include a summary of the event, a review of the affected establishment, the results of the investigation and a summary of the corrective actions taken by the establishment operators.

These actions have made CFIA more transparent by informing consumers and other stakeholders of its regulatory activities and decisions. Making this information public also promotes public confidence in the federal government's enforcement actions and leads to informed consumer choices.

MEASUREMENT:

“To protect the safety of food in the modern era requires greater familiarity with current food production and distribution systems. Transparency in compliance and performance activities and measures on the part of national and international organizations, trading partners and industry will provide consumers with timely, valuable and reliable information to guide their decision making and to further improve the safety of food in Canada.”

Dr. Brian Evans, Chief Food Safety Officer for Canada



ENHANCING SURVEILLANCE AND EARLY DETECTION

The Independent Investigator found a need for improvements in surveillance and detection, both of *Listeria monocytogenes* in food, and of subsequent cases of foodborne illness. In response, the Government is strengthening national surveillance and early detection of foodborne illness through improvements to operational, laboratory and disease-reporting networks. These measures are key to ensuring better preparedness in cases of foodborne illness outbreak in the future.

COLLABORATION IN SCIENCE:

“Increasingly, science is enabling risk mitigation with respect to many elements along the food continuum and risk communication within diverse groups of stakeholders with varied interests. Therefore, it should come as no surprise that there is a greater emphasis on further integration among disciplines and collaboration between diverse groups to advance their science knowledge, networks, best practices, diagnostic methods and research. Increasing our coordination and co-operation with international partners in various areas—including regulation, science, performance indicators and reporting—will assist in improving food safety outcomes.”

Dr. Brian Evans, Chief Food Safety Officer for Canada

SURVEILLANCE TOOLS

CANADIAN NETWORK FOR PUBLIC HEALTH INTELLIGENCE

The Investigator recommends that governments continue to use and support surveillance and monitoring systems such as the Canadian Network for Public Health Intelligence (CNPHI)—Public Health Alerts (formerly known as the Canadian Integrated Outbreak Surveillance Centre), a system used for early notification of potential outbreaks by FPT and local public health and food safety partners. The CNPHI is a secure web-based collective of applications designed to facilitate the nationwide, integrated real-time collecting and processing of laboratory and epidemiological surveillance data; the dissemination of strategic intelligence; and the coordination of the public health response. FPT governments do in fact continue to use and support CNPHI, including via the PulseNet Canada outbreak response network, as described below.

ASSESSMENT OF MULTI-JURISDICTIONAL OUTBREAK MANAGEMENT TOOLS

PHAC continues to maintain and support the integrated Public Health Information System, a case- and outbreak-management system that currently operates in seven provinces and territories across Canada.

At the Investigator's suggestion, PHAC has begun to assess the Canada Health Infoway-funded Panorama system—a pan-Canadian case-management tool—in order to determine its suitability for effectively managing multi-jurisdictional foodborne illness outbreaks. In addition, PHAC is developing a strategy with respect to business intelligence tools and analytical

capacity in order to take full advantage of current and future surveillance and monitoring systems. This strategy will include investigating the feasibility of integration with alerting systems such as CNPHI.

NATIONAL ENTERIC SURVEILLANCE PROGRAM

PHAC has also made improvements to the national surveillance of listeriosis by adding *Listeria monocytogenes* to the National Enteric Surveillance Program (NESP). The weekly data obtained on the number of listeriosis cases reported across Canada is valuable for observing changes in trends and identifying potential outbreaks.

In addition, an enhanced listeriosis surveillance pilot project has been established to collect case-based information on listeriosis cases. This pilot project provides a timely flow of information in the form of questionnaires from local and provincial public health officials to PHAC epidemiologists. PHAC has received completed questionnaires for 79 per cent of reported cases. The questionnaires provide demographic, clinical, laboratory and epidemiological information. The questionnaire database has been useful in providing risk factor information on sporadic cases, as well as providing timely information during cluster and outbreak investigations.

The NESP data and the case information from the pilot project can be integrated to aid in the detection of clusters of the *Listeria* pathogen and in the investigation to identify the source of the outbreak, resulting in timelier public health responses to outbreaks of listeriosis.

PULSENET CANADA

PulseNet Canada is a national network of provincial and federal laboratories that “fingerprints” bacterial

samples from humans and foods using DNA technology. All of the fingerprints are submitted electronically to a database maintained by PHAC, enabling the Agency to quickly identify illnesses appearing in different parts of the country that may be related. This ensures that potential outbreaks are investigated as quickly as possible and also helps identify the source of the illness. These genetic fingerprints of bacteria are compared and shared rapidly among public health officials throughout the country during both routine surveillance and outbreaks.

A major factor in the improved ability to detect foodborne illness is the increased capacity of the PulseNet Canada network across its partner laboratories. Within this network, the PulseNet laboratory DNA fingerprinting technology is used to conduct surveillance for foodborne disease, to detect outbreaks at the earliest possible stage and to help coordinate the public health response. PulseNet is also the primary link for data sharing and communications for its partner-members—PHAC, CFIA, Health Canada and the provincial public health laboratories as represented by the Canadian Public Health Laboratory Network.

Participating clinical and food laboratories collect and share evidence (DNA fingerprints) of clusters of human disease linked to foodborne pathogens. DNA fingerprinting techniques and concurrent access to epidemiological evidence have greatly improved Canada's ability to detect contaminated food products and to identify in the laboratory a link between the consumption of such food products and cases of human disease. Laboratory information is shared and analyzed between all partners daily, including information provided by CFIA on contaminated food products that have been distributed. This rapid exchange of

evidence between public health and food safety partners allows for a timely and accurate detection of foodborne disease trends and helps protect the health of Canadians. PulseNet Canada now identifies and notifies health partners whenever two or more matching *Listeria* DNA fingerprints are detected within a period of 120 days.

Since the 2008 listeriosis outbreak, the number of provincial and federal laboratories and laboratory staff that are certified by PulseNet Canada for work with *Listeria monocytogenes* has increased from nine staff in four laboratories prior to the listeriosis outbreak to 27 staff in nine laboratories across Canada.

In addition, PHAC is developing a multi-media training curriculum to teach the standardized PulseNet Canada DNA fingerprinting methodology to federal and provincial laboratory staff. This initiative will include distributing materials, protocols and controls to PulseNet Canada member laboratories. The objectives are to increase the number of locations and the numbers of staff trained and certified to use PulseNet Canada laboratory and informatics modules and to increase information sharing with the CNPHI. The development of this formalized training tool is scheduled for completion by early 2012. Once implemented, the training curriculum will assist in ensuring that laboratory capacity exists nationally for all FPT partners, in addition to ensuring surge capacity during foodborne illness outbreaks.

ADDING THE CANADIAN FOOD INSPECTION AGENCY TO PULSENET CANADA

The Public Health Agency of Canada (PHAC) has expanded its PulseNet Canada network to include the Canadian Food Inspection Agency (CFIA). With CFIA as a full partner of PulseNet Canada, the Government of Canada's ability to detect and respond to contaminated food products is greatly improved.

PHAC also links to the PulseNet networks in the United States and around the world. The PulseNet International network, which comprises 80 countries spanning Central and South America, Europe, the Middle East, Sub-Saharan Africa and the Asia-Pacific region, facilitates the identification of emerging regional and global trends and outbreaks. PHAC has access to all genetic fingerprint data in the United States, ensuring that outbreaks and emergencies that span (or potentially span) both sides of the border can be identified and investigated without delay.

As a full partner of PulseNet, CFIA can now report in real time to provincial and federal PulseNet Canada members the DNA fingerprints of potential illness-causing bacteria isolated from samples during its routine testing of food products. Real-time communication of Pulsed Field Gel Electrophoresis patterns from foods will improve our ability to identify links between human diseases and consumption of those products.



THE PULSENET CANADA OUTBREAK DETECTION AND INVESTIGATION SYSTEM

Similar to crime scene investigators, public health officials investigating foodborne illness outbreaks use forensic science to pinpoint disease-causing culprits. While criminal investigators use DNA fingerprinting to link a perpetrator to a crime, disease detectives use DNA fingerprints to link bacteria to the food source of an outbreak. Using this knowledge, public health officials are able to coordinate their efforts to identify the specific cause of disease, trace these cases to a specific food source and then remove that product from the Canadian marketplace.

Individuals infected with bacteria sharing the same DNA fingerprint will have been infected from a common source. It is important for public health officials to pinpoint the source of contaminated food and link these cases together so that contaminated items can be removed from the market.

A critical test used to accurately identify contaminated food sources and to properly track foodborne illness is the Pulsed Field Gel Electrophoresis method used for DNA fingerprinting. When they find similar patterns through PulseNet, scientists can determine whether an outbreak is occurring, even when the cases of illness are geographically dispersed. Through PulseNet, outbreaks and their causes can be identified in hours rather than days, which leads to timelier interventions that reduce the impact on public health.

Work is also being done by Health Canada, CFIA and PHAC to create an inventory of the capabilities of federal laboratories (for example, staffing levels, scientific expertise and available equipment/ technologies) and to identify what partnerships have been established to increase the capacity for rapid detection of, and response to, potential foodborne illness outbreaks. PulseNet Canada is seen as a model of integrated food safety and public health systems, available to guide the development of the larger network of networks initiative (aimed to link human disease, food and animal labs), as recommended by the Independent Investigator.

A NETWORK OF NETWORKS

The Investigator found that surveillance and testing of pathogens such as *Listeria monocytogenes* in food could be improved by better integrating the work of food safety and public health laboratories. In particular, the Weatherill Report suggests that governments should proceed to establish a national integrated laboratory network—a network of networks.

The goal of this initiative is to be better prepared for future foodborne illness outbreaks through the creation of a nationwide operational system of laboratory networks. This national system will be capable of coordinated action and the timely provision of high-quality data for early detection and effective management of foodborne illness or other events requiring an integrated laboratory response.

To achieve this goal, representatives from CFIA, Health Canada, PHAC, Environment Canada, Fisheries and Oceans Canada and AAFC are working together to prepare a project plan that lays out the requirements for establishing a network of networks.

An inaugural workshop was held in March 2011, where prospective network members (representatives from various sectors of the federal, provincial, industry and academic laboratory communities

across Canada) met with CFIA, PHAC and international experts to identify common interests, explore current laboratory capacity, and discuss how the networking of food, animal health and public health laboratories can build capability for the future.

The establishment of a fully integrated Canadian laboratory network is a complex enterprise that will require time and resources to complete. The March 2011 workshop marked the beginning of a process that will result in enhanced laboratory testing capacity, investigative support and surge capacity for faster outbreak response in the future.

NOVEL DETECTION TECHNOLOGIES

GENOMICS

During the 2008 listeriosis outbreak, PHAC implemented novel laboratory technologies, notably whole-genome sequencing, to obtain definitive characterizations of the outbreak-associated *Listeria* strains. Genomics began as a research tool, but technological advances have made it feasible and suitable for use during public health investigations of bacterial diseases. Evidence provided by whole-genome sequencing combined with epidemiological evidence to determine the cause and scope of human illness is all but indisputable. These new genomic methods promise to revolutionize the ability of the laboratory to provide information and evidence with respect to disease-causing pathogens. PHAC is now able to perform whole-genome sequencing for outbreak-associated *Listeria* strains that are causing disease in Canada.

As part of the work, PHAC and Health Canada are conducting joint studies that use the latest generation of genomics technologies and a diverse set of *Listeria* isolates. The purpose of these studies is to investigate and understand the distribution and characteristics of *Listeria* populations that have previously been associated with outbreaks and contaminated food

products, and thereby develop a foundation of genetic evidence that can be used for future investigations.

PHAC's National Microbiology Laboratory is now working with public health and food safety partners to regularly implement these modern genomics technologies in their laboratories. Recently, PHAC engaged these new skill sets, both within Canada and in collaboration with other countries, to assist in the response to the Haitian cholera outbreak of 2010-11, and to the 2011 German *E. coli* outbreak. PHAC collaborated in genomic efforts with Haiti and the United States to determine the origin of the Haitian outbreak strain, and with Ontario to confirm and determine the genetic features of the single Canadian case identified in the German *E. coli* outbreak.



By addressing the Investigator's recommendations concerning laboratories and the use of technology, PHAC is now better able to detect foodborne illness and to respond more quickly when there is an outbreak, and it has been recognized as an international innovator for public health genomics, which is becoming an essential and innovative part of outbreak response.

FASTER LAB TESTS

A critical part of any food safety investigation is the lab test that confirms whether the food is contaminated. Faster testing times directly affect how quickly contaminated food can be pulled from shelves, and in some cases could prevent it from getting to consumers in the first place.

During the 2008 listeriosis outbreak, the standard waiting time to get reliable test results for *Listeria*

was seven to ten days. All of the tests were completed within that time frame.

However, following the outbreak, the Government of Canada invested heavily to improve the technology to detect *Listeria* more quickly. Health Canada has developed a new lab test that will reliably detect *Listeria* in three to five days. The method is currently being validated and will be made available by the end of 2011.

Through a partnership with the National Research Council, Health Canada is now investigating the development of new testing technologies that could generate definitive lab results in hours instead of days. A prototype microchip-based method has been developed by government scientists, and it is now being tested in departmental laboratories.

Health Canada, in collaboration with PHAC, continues to operate the Listeriosis Reference Service for Canada, with objectives that include examining suspect foods and clinical specimens submitted for analysis, and maintaining reference cultures of *Listeria monocytogenes*. The Listeriosis Reference Service holds all strains and characterization data indefinitely, which facilitates the comparison of various strains. The Foodborne Illness Outbreak Response Protocol (FIORP [2010]) includes an appendix on the Listeriosis Reference Service that describes the purpose of the Service and the procedures to follow when foodborne listeriosis is suspected.

The surveillance and detection efforts described in this section all serve to help make more rapid decisions. As a result, industry and government partners have at their disposal an evolving suite of validated detection tools that allow action to be taken at the earliest opportunity in a foodborne illness outbreak or emergency situation. Regulatory authorities are able to make decisions more rapidly, act quickly to determine which food products may be causing illness and establish the source of the contaminated food products.



IMPROVING EMERGENCY RESPONSE

A key finding of the Weatherill Report was that a sense of urgency appeared to be lacking as the outlines of the outbreak in question were taking shape. For example, the unavailability of certain information and personnel considerably delayed the launching of a concerted response. Opinions differed as to the appropriate moment to issue warnings to the public, and even after the seriousness of the situation was realized, emergency centres were not immediately activated.

In response to these findings, the Government has taken steps to identify staff who can provide additional support during foodborne illness outbreaks. In addition, PHAC has completely revised and modernized the Foodborne Illness Outbreak Response Protocol (FIORP), which remains the Government's blueprint for managing such outbreaks. Two other key protocols have been developed: the Food Safety Communications Protocol, which governs communications during an outbreak; and the Foodborne Illness Emergency Response Plan (FI ERP), which is used when a standard response to the outbreak event is insufficient and extraordinary measures are called for. The Government has also worked to improve governance of multi-jurisdictional foodborne illness outbreaks by clarifying accountability and ensuring coordination of action among all responsible federal partners.

SURGE CAPACITY

The Independent Investigator observed that most organizations involved in the response to the 2008 outbreak had limited pre-planned capacity for managing the surge in demand for expertise and resulting laboratory testing.

Federal surge capacity is being upgraded through training, laboratory certification and partnership among PHAC, Health Canada and CFIA. PHAC has also cross-trained staff from across its various program areas to provide surge capacity to PulseNet Canada technical staff when needed. PHAC provides personnel and capital resources to the provinces and territories, including the sharing of full-time staff and laboratory and informatics equipment as required.

PUBLIC HEALTH RESERVE

PHAC has developed and is testing a pilot model of a Public Health Reserve (PHR) of epidemiologists external to the Health Portfolio to bolster capacity during foodborne illness outbreaks and other public health events. A permanent PHR may also include other public health professionals. PHAC has also identified a roster of internal human resources who could support response activities. An inventory of skill sets required for surveillance and outbreak response was developed and validated, and a gap analysis was undertaken. The results informed the scope of the pilot project and the development of a training strategy. A reserve framework has been established in consultation with internal and external public health experts, and internal partners have been engaged to support strategic development and implementation.

The PHR pilot model is currently being tested and assessed through various exercises and training events. A number of pilot participants were recruited and have attended their first training

event. Feedback from participants was positive, and additional training events and exercises are being planned in fall/winter 2011-12 to further prepare them for response activities.

Work is under way to identify a governance/administrative structure for the establishment of a PHR. In addition, development of a reserve database application is under way. This database will be used for collecting and extracting information about external resources to support epidemiology surge capacity. The results of assessment activities will be completed by March 31, 2012, and will inform the decision on the feasibility and scope of a permanent PHR.

OUTBREAK COORDINATION AND COMMUNICATION

THE IMPORTANCE OF PROTOCOLS

When outbreaks occur, food safety partners from different levels of government work together to respond and to keep Canadians informed so that they can make appropriate choices to protect their health. There are many questions that must be addressed to collaborate effectively: How do public health officials in the provinces and territories inform the federal government about an outbreak? When does PHAC take the lead in coordinating the outbreak investigation and response? Who should be telling Canadians about food safety risks or outbreaks happening across the country? How do officials ensure that the messages provided to Canadians are consistent and communicated effectively?

In order to address these questions, food safety partners have developed protocols that guide how they work together, how they carry out their responsibilities in various situations, and how they communicate important information to the general public, including those most vulnerable to serious illness.

THREE KEY PROTOCOLS ARE IN PLACE:

The Foodborne Illness Outbreak Response Protocol (FIORP), last updated in June 2010, provides guidance on how federal, provincial and territorial partners work together during a multi-jurisdictional foodborne illness outbreak, and establishes clear lines of communication so that vital information is shared in a timely, consistent manner to protect the health of Canadians.

The Food Safety Communications Protocol is used by the federal health and food safety partners: PHAC, Health Canada and CFIA. It guides collaboration among communications staff in partner organizations and assists in providing clear, consistent and helpful information to Canadians.

The Health Portfolio Foodborne Illness Emergency Response Plan (FI ERP) guides the response to an extraordinary situation when normal food safety procedures are insufficient and resource capacity is exceeded. The Plan builds on the FIORP (2010) and uses an incident management structure and a set of emergency response support systems within the PHAC Emergency Operations Centre to manage the outbreak.

Each of these protocols is reviewed on a regular basis to ensure that they are up to date. In the case of a foodborne illness outbreak, they are relied upon to help the Government of Canada and its food safety partners respond and communicate efficiently and effectively.

FOODBORNE ILLNESS OUTBREAK RESPONSE PROTOCOL

The Independent Investigator made a number of recommendations aimed at improving how the Government manages foodborne illness outbreaks. A key recommendation was that PHAC should revise and modernize the Foodborne Illness Outbreak Response Protocol (FIORP), which guides the management of multi-jurisdictional foodborne illness outbreaks in Canada.

A multi-jurisdictional outbreak of foodborne illness is one that occurs in more than one province or territory, or occurs in Canada and involves another country or countries, or multiple agencies at all levels of government. The investigation of, and response to, multi-jurisdictional foodborne illness outbreaks in Canada may involve several organizations at multiple levels of government

with complementary responsibilities. The FIORP is a long-standing protocol designed to guide the coordination of roles and responsibilities during such an outbreak.

Following the 2008 outbreak, PHAC led the process to revise the FIORP in consultation with Health Canada, CFIA, and provincial and territorial counterparts, with the objective of enhancing collaboration and overall effectiveness of the response to multi-jurisdictional foodborne illness outbreaks. The FIORP (2010) was approved by FPT deputy ministers of health and agriculture in June 2010.

The FIORP (2010) clearly outlines the roles and responsibilities of all partners involved in responding to a foodborne illness outbreak. It establishes PHAC as the lead agency in coordinating the investigation and response in

Canada during a multi-jurisdictional outbreak. It also establishes PHAC as the usual first point of contact for partners wishing to notify the federal government of issues related to foodborne illness outbreaks, or requesting content expertise/support.

While PHAC assumes the lead coordination role, responsibility for the outbreak investigation is spread across a number of separate agencies according to mandate. For example, within the Government of Canada, CFIA leads the food safety investigation, PHAC leads the epidemiological investigation and Health Canada leads the health risk assessment process that guides risk-management decisions. Each partner participating in an outbreak investigation retains its responsibilities for actions and activities consistent with its mandate.

PHAC conducted exercises of the revised FIORP (2010) with each province and territory from January to April 2011. Representatives from PHAC, CFIA and Health Canada participated with each province and territory in exercises that were tailored to address their individual needs. These exercises included testing for internal communication gaps, assisting with knowledge development and strengthening networks among communications partners.

Feedback on these exercises has been very positive: those who participated had increased confidence in working with the FIORP and a better understanding of everyone's roles and responsibilities. To complete the testing process, PHAC will coordinate a national exercise of the FIORP (2010) with all partners by the end of March 2012.

When a foodborne illness outbreak is identified, there is a clear public interest in sharing information

among partners. A key element of the FIORP (2010) is the inclusion of provisions for the sharing of information, including epidemiological data, as needed to identify and investigate the foodborne illness outbreak at its source, subject to applicable laws governing the sharing of information.

The Outbreak Investigation Coordination Committee (OICC), established pursuant to the FIORP, serves as the main forum for information sharing and interpretation, clarification of roles and responsibilities, establishment of response priorities, and the development of communications strategies related to an actual or suspected foodborne illness outbreak. Once the presence of a potential multi-jurisdictional foodborne illness outbreak requiring a collaborative and coordinated investigation is confirmed, the OICC is activated.

The updated communications section of the FIORP (2010) includes clearer language and guidance for improved coordination of public communications among FPT partners. This, along with the exercises held with each province and territory, has resulted in a clearer understanding of PHAC's role as coordinator of the investigation and response during a multi-jurisdictional foodborne illness outbreak; of how PHAC Communications collaborates with its federal and provincial/territorial partners; and of how the Outbreak Communications Team (OCT) works as part of the OICC. Communications staff from the partners involved in the outbreak will be integrated into the OICC when it is established to share information about the outbreak.

When the need for public communications is established within the OICC, communications staff from the lead organizations convene a teleconference with their counterparts in other involved organizations to establish an OCT.

THE FOODBORNE ILLNESS OUTBREAK RESPONSE PROTOCOL (FIORP [2010]) BILATERAL EXERCISES

The FIORP was collectively developed by the Public Health Agency of Canada (PHAC), Health Canada and the Canadian Food Inspection Agency (CFIA), in consultation with provincial and territorial counterparts. It guides how these partners work together when faced with an outbreak of foodborne illness that affects more than one province or territory, or occurs in Canada and involves another country or countries. The 2010 update of the FIORP encompasses a number of new roles and responsibilities, as well as new information exchange and communication processes.

How do we help to ensure that all these partners know their roles and responsibilities when we are faced with such an outbreak?

Between January and April of 2011, PHAC led bilateral training exercises on the revised protocol with each of the 13 provinces and territories.

Provincial and territorial health partners, local governments, Health Canada and CFIA participated in the exercises.

PHAC initiated 13 working groups in the fall of 2010 to begin planning for exercise scenarios that would best meet the needs of each of the groups. PHAC and the provinces and territories created exercises based on the type of outbreak to which a region could be called upon to respond, from an outbreak of Hepatitis A in Nova Scotia blueberries to trichinosis in game meat in the North.

From the first exercise in Regina, Saskatchewan, to the final one in Montréal, Quebec, more than 640 participants worked through scenarios that increased their knowledge of the roles, responsibilities and processes of the many partners involved in a response to a foodborne illness outbreak. The participants represented the broad spectrum of roles typically involved in a multi-jurisdictional foodborne illness outbreak investigation and included medical officers of health, program managers and directors, public health inspectors, environmental health officers, veterinarians, food safety specialists, epidemiologists, public health nurses, communications staff, microbiologists and laboratory technologists.

In addition to these local and provincial/territorial-level participants, federal representatives from PHAC (Outbreak Management Division, National Microbiology Laboratory and Communications Directorate representatives), CFIA (Office of Food Safety and Recall) and Health Canada (First Nations and Inuit Health Branch and the Bureau of Microbial Hazards) were in attendance during the exercises as participants and observers.

The OCT is responsible for developing, in collaboration with the OICC, coordinated plans and messaging for communicating with the public and those at greater risk.

As a result, public communications are better coordinated, and processes to provide information to vulnerable populations most at risk of severe illness are clearer.

Overall, the revision of the FIORP and subsequent exercises to test it have resulted in an increased understanding of how partners work together at all levels of government and among senior officials in the event of a foodborne illness outbreak, and have laid the foundation for a more coordinated response to future outbreaks.

Also included in the FIORP (2010) is an appendix to guide the post-outbreak review discussion among the partners involved in the outbreak response. The post-outbreak review includes information such as confirmation of the outbreak's cause, proposed measures to prevent recurrence, assessment of the effectiveness of outbreak control measures, and evaluation of the utilized processes and methods. Several post-outbreak reviews have been conducted using the process established in the FIORP since it was finalized in June 2010. Results of post-outbreak reviews will be used to evaluate the FIORP and to make any changes to improve the Protocol.



“Protocols that clearly lay out roles, responsibilities and lines of communication are essential when multiple jurisdictions are involved in managing a foodborne illness outbreak.”

“Provinces and territories have worked with the federal government to make improvements to the plan to manage multi-jurisdictional foodborne illness outbreaks. This strong collaboration has better prepared us to respond effectively and rapidly in the event of an outbreak.”

Dr. Arlene King, Chief Medical Officer of Health of Ontario

FOOD SAFETY COMMUNICATIONS PROTOCOL

Having recognized the need to establish guidelines for improving communication with Canadians during an outbreak of foodborne illness, PHAC worked with Health Canada and CFIA to produce the Food Safety Communications Protocol, which was finalized in January 2010. The Protocol clarifies the roles and responsibilities within the federal family for joint communications on food safety issues that involve the three federal partners. It is based on risk communications principles that are consistent with the Health Canada/PHAC Health Portfolio Risk Communications Framework.

The Communications Protocol includes an appendix named “Foodborne Incident Federal Risk Management Scenarios,” which describes some of the scenarios that might evolve during a food contamination event or a foodborne illness outbreak. These scenarios guide federal action among CFIA, Health Canada and PHAC, and provide advice on communication to the public for each situation. The result is a more effective process to ensure that Canadians receive clear and consistent messages about how to protect themselves and their loved ones against illness.

In November 2010 and February 2011, PHAC, Health Canada and CFIA piloted a tabletop exercise and training program to test understanding of the Communications Protocol. These exercises were designed to raise awareness of the Protocol, discuss how to implement the Protocol, and build communications surge capacity within the three organizations to respond effectively to food safety issues and emergencies.

PUBLIC HEALTH AGENCY OF CANADA: RISK COMMUNICATIONS STRATEGY

While Health Canada provides food safety prevention advice to Canadians, PHAC is responsible for providing Canadians, including those most at risk for serious illness, with the information that they need to protect themselves and their families during a foodborne illness outbreak.

PHAC continues to work with partners in the provinces and territories to develop food safety messages explaining the protective measures the public can take during a national foodborne illness outbreak. As part of this effort, PHAC has developed a risk communications strategy aimed at the general public and at medically and functionally vulnerable groups such as older adults, pregnant women, those with weakened immune systems and those living in isolated communities.

The PHAC Risk Communications Strategy includes activities that the Agency can implement immediately, should a national foodborne illness outbreak occur. It ensures that PHAC is prepared well in advance to communicate with the public, both before and during a multi-jurisdictional foodborne illness outbreak, by providing the Agency with communication tools and approaches for communication purposes. Prior to a foodborne illness event, the Strategy builds communications capacity by training staff in the use of the federal Communications Protocol, and by supporting Health Canada and CFIA’s risk communications work. During a multi-jurisdictional foodborne illness outbreak, PHAC will use these communication processes and draw from pre-tested messages to help inform Canadians about how to protect themselves. In the wake of a foodborne illness outbreak, PHAC will explain to the public what steps were taken to protect Canadians, and what lessons were learned to improve its methods for preventing, managing and responding to foodborne illness outbreaks.

RISK COMMUNICATIONS STRATEGY ON FOOD SAFETY

During a multi-jurisdictional foodborne illness outbreak, the Public Health Agency of Canada (PHAC) must communicate quickly and effectively to the Canadian public in order to provide them with the information they need to protect themselves.

Although it is important that prompt and clear communication reaches everyone during a foodborne illness outbreak, it is even more important to reach those most susceptible to serious health complications. These groups include older adults, pregnant women, young children, those with compromised immune systems and those who live in remote communities with limited access to medical care.

To better prepare itself for when such an outbreak occurs, PHAC developed and has begun implementing a comprehensive Risk Communications Strategy for communicating during a national foodborne illness outbreak.

This Strategy involves stakeholders as the focal point. Messages will be aimed at parents of young children, vulnerable populations and media and public health professionals, as well as the general public. The Strategy is supported by tools and tactics adapted specifically to these groups. Tools include plain language fact sheets, media events, print and radio advertisements, webcasts and video clips.

The Strategy is evidence-based. Its objectives, approaches, activities, tools and products are all based on the needs of stakeholders, which are measured by research, including public opinion research and focus testing of messages.

The Strategy includes a measure of scalability. Flexible plans of varying degrees can be put into place according to the nature and severity of the outbreak.

Many elements of the plan are well under way. The next time an outbreak occurs that requires PHAC to inform Canadians how to best protect themselves from illness, the Agency will be well prepared to do so quickly and effectively.

PHAC has a lead role in communicating to the public during multi-jurisdictional outbreaks. Its performance of that role during the H1N1 pandemic in 2009 raised the public profile of the Agency and its Chief Public Health Officer (CPHO). PHAC has built on that public awareness by distributing information about its mandate during a foodborne illness outbreak

through the Government of Canada's Food Safety Portal. As a result of this increased awareness and the work to improve communication to the public, the CPHO is well positioned as chief spokesperson to provide information to Canadians on how they can protect themselves during a multi-jurisdictional foodborne illness outbreak.



DR. DAVID BUTLER-JONES, CHIEF PUBLIC HEALTH OFFICER (CPHO): FOOD SAFETY Qs&As

Q: As CPHO, what is your role when it comes to foodborne illness?

My primary role as CPHO for the Government of Canada is to focus on protecting the health of Canadians. At the Public Health Agency of Canada, we coordinate with our partners within the federal family, across Canada and internationally, to prevent, investigate and respond to these illnesses and react to foodborne illness outbreaks. When an outbreak does occur, I lead communications to Canadians, providing them with the information they need to protect themselves and their families. We are part of a food safety system that works collaboratively to prevent foodborne illness, beginning at the farm level and extending until the food reaches our plates. We are continually assessing our efforts and making improvements to the food safety system for all Canadians.

Q: What role does PHAC play in food safety?

The Agency focuses on human illness by providing laboratory reference services; conducting surveillance for foodborne disease; identifying risks; and providing consultation, content expertise, coordination and public health capacity during outbreaks. In particular, the Agency leads the coordination of the investigation and response and of communications in Canada during multi-jurisdictional foodborne illness outbreaks. It is the main liaison with international public health counterparts and the national focal point for the International Health Regulations. The Agency also works with its partners in food safety at all levels of government to identify sources of illness, to prevent and control disease and to advocate for improved food safety and best practices for food handling.

Q: What's the most important thing for people to know when there is a foodborne illness outbreak going on around them?

Most of us will not get sick as a result of a foodborne illness outbreak. We all have some control over the safety of our food, and it is important to remember that there are many things each of us can do to reduce the risk of becoming ill. We can learn about safe food handling and storage practices and follow the simple precautions—clean, chill, separate and cook [www.foodsafety.gc.ca]—to reduce the risk of foodborne diseases and to protect ourselves and others. However, when an outbreak does occur, the Agency is committed to providing timely information that Canadians can use to protect themselves.**

Q: Will we ever face another outbreak like the listeriosis outbreak of 2008?

We cannot fully prevent outbreaks from occurring, but we can work to minimize the risk and to ensure that we are as well prepared as possible, should one occur. We have worked with our food safety partners since the 2008 listeriosis outbreak to improve our ability to detect and respond to foodborne illness outbreaks and to improve our capacity to reduce the risk of foodborne illness. We will continue to make improvements to ensure that we are well prepared to protect the health of Canadians.

FOODBORNE ILLNESS EMERGENCY RESPONSE PLAN

As noted above, multi-jurisdictional foodborne illness outbreaks are normally guided by the FIORP (2010), which provides direction on how FPT partners work together under these circumstances.

Emergencies are those extraordinary situations that require action beyond normal procedures, and require additional resources to respond to the scope and/or impact of the event. Foodborne illness emergencies occur rarely, but can have far-reaching implications, as was the case during the 2011 *E. coli* event in Germany linked to sprouts.

For those occasions when a foodborne illness outbreak requires a response beyond the scope of the FIORP, PHAC and Health Canada have developed the Foodborne Illness Emergency Response Plan (FI ERP), which is included as an appendix to the Health Portfolio Emergency Response Plan (HP ERP).

An emergency response that uses the FI ERP is invoked when the triggers for the FIORP are activated and, in addition, the event is considered severe or involves an unusual agent or progression. The FI ERP designates PHAC as the lead responding agency at both the national and federal level. It includes detailed information on the activation of the Plan and on the eight-phase process that is used to respond to the emergency.

The FI ERP makes use of an incident command structure known as an incident management system (IMS). The IMS is an operational framework for emergency response. The system facilitates communication, response activities and co-operation within and between organizations. The FI ERP prescribes how the various partners will be engaged with its IMS, should the plan be implemented for a foodborne illness emergency response.

The FI ERP IMS structure is based on that of the Health Portfolio Emergency Operations Centre (HPEOC). It has been customized to show how Health Portfolio resources will be organized in the HPEOC to support the response to a foodborne illness emergency. The flexibility and scalability of the structure are specified according to the multitude of partners, roles and possible scenarios.

The IMS includes links to the FIORP OICC, which coordinates FPT activities directly related to outbreak response during the emergency. The IMS also includes a high-level link between a representative provincial/territorial group and the Health Portfolio Executive Group in order to facilitate senior-level FPT decision making during a foodborne illness emergency. IMS liaison officers will ensure appropriate communication with the regional offices, CFIA and other government departments.

CANADIAN FOOD INSPECTION AGENCY (CFIA) EVALUATION: INTERFACES WITH PARTNERS

An evaluation was conducted on the design and effectiveness of CFIA's interfaces with other federal departments and with other jurisdictions during food safety incidents over a two-year period (2009-11). Ms. Weatherill identified opportunities to strengthen these interfaces, especially in relation to food safety investigations and emergency response.

Overall, the data gathered through the course of the evaluation suggests that the interdepartmental and inter-jurisdictional ability to manage and respond to foodborne illness outbreaks has been significantly strengthened since the release of the Weatherill Report. The evidence indicates that CFIA, Health Canada, the Public Health Agency of Canada (PHAC), and the provinces and territories have invested significant time and effort in improving the design and effectiveness of their interdepartmental and inter-jurisdictional interfaces. From CFIA's perspective, improvements include clarified roles and responsibilities, better executed processes and procedures, and enhanced coordination, communication, and response during emergency management of foodborne illness incidents.

However, there are opportunities for continued improvement. The provinces and territories would benefit from ongoing guidance to bring more consistency when responding to multi-jurisdictional foodborne illness incidents. Provincial and federal laboratories would benefit from better sharing of information on new methods and technologies.

The results of this evaluation are helping CFIA to further improve its performance in working with its food safety partners.

The FI ERP was endorsed by the Health Portfolio Joint Emergency Preparedness Committee in June 2011. The HP ERP and its appendices support the Government of Canada's all-hazards Federal Emergency Response Plan. Testing and validation of the FI ERP will take place as part of the national exercise of the FIORP (2010) by the end of March 2012, to ensure all federal partners are aware of the FI ERP and trained with respect to its components in the case of a foodborne illness emergency.

GOVERNANCE

In her report, the Independent Investigator observed that management of the listeriosis outbreak represented a significant challenge to the multiple jurisdictions (federal, provincial and municipal) and the various parts of the federal

government that were involved. In order to better manage outbreaks of foodborne illness, CFIA, Health Canada and PHAC have established internal governance mechanisms to streamline information sharing.

SPECIAL COMMITTEE OF DEPUTY HEADS

In July 2009, the Clerk of the Privy Council asked the Deputy Minister of AAFC to chair a committee of Deputy Heads from CFIA, Health Canada and PHAC. The Special Committee of Deputy Heads (SCDH) was formed to ensure that all food safety partners are better positioned to share information and provide a more cohesive and forward-looking approach to food safety. The President of CFIA, the Chief Food Safety Officer for Canada, the Deputy Minister of Health Canada and PHAC's Chief Public Health Officer meet on a regular basis

and are supported by assistant deputy minister– and director general-level committees, as well as a full-time secretariat at AAFC. A six-month report was provided to the Clerk in March 2010, and three interim progress reports have been released and made available to Canadians through the Food Safety Portal. The work of this committee has improved coordination and collaboration among federal departments and agencies that have responsibilities in Canada’s food safety system. This structure has served to increase the knowledge and understanding of each partner’s mandate, and partners are much better positioned to share information and collaborate in response to potential foodborne illness outbreaks.

CHIEF FOOD SAFETY OFFICER FOR CANADA

CFIA has completed a review of its organizational structure and decision-making processes, and has made improvements to its governance structure. On May 25, 2010, the Prime Minister announced the appointment of Canada’s first Chief Food Safety Officer (CFSO), whose role is to bring a more integrative approach to achieving CFIA’s food safety objectives. The appointment of a CFSO for Canada acknowledges the rapid evolution of food production systems, and is symbolic of the heights that food security and safety issues have attained on the world stage. The CFSO works with public and private sector partners to identify emerging trends and opportunities, actively engages with consumers, and incorporates best practices for managing and reporting food safety systems.

OFFICE OF FOOD SAFETY AND RECALL

In June 2010, CFIA completed a review of governance in relation to the Office of Food Safety and Recall (OFSR) and implemented measures to enhance accountability for the work of the Office. As a result, the OFSR reports directly to

the Vice-President of Operations. The Office of the President and senior management are made aware of emerging food safety issues through daily issues briefings. In the case of high-profile or complex food safety investigations, CFIA’s CFSO may convene a senior-level committee to discuss the issue, and provide collective, strategic direction relating to the Agency’s response. This new governance structure is more streamlined and ensures early engagement by senior management on food safety issues. Additionally, the OFSR has been confirmed as the primary point of contact with Health Canada during a food safety investigation.

In the event of a national food emergency or significant food safety issue, all necessary CFIA resources are dedicated to managing the response. In addition, CFIA can activate an incident command structure (ICS) with the Incident Commander as the primary point of contact with federal partners, including Health Canada and PHAC. ICS is an international model for the command, control and coordination of a response to an emergency or significant food safety issue. It combines facilities, equipment, personnel, procedures and communications operating within a common organizational structure.

Taken together, these improvements allow CFIA to better coordinate food safety investigations and food emergencies, support Health Canada in conducting health risk assessments and ultimately enable the Agency to better protect the health of Canadians by responding more effectively to food safety issues.

PUBLIC HEALTH AGENCY OF CANADA APPOINTS SENIOR OFFICIALS

Since the 2008 listeriosis outbreak, PHAC has made two senior appointments to increase its capacity for flexible and timely responses to public health threats.

In order to support the Chief Public Health Officer (CPHO) in his role as the lead public health professional for the Government of Canada, an Executive Vice-President/Chief Operating Officer (Associate Deputy Minister) was appointed in September 2009. The responsibilities associated with the new position include providing leadership on all matters related to central agencies (Privy Council Office, Treasury Board Secretariat, Department of Finance); leading and assuring high-quality PHAC planning, execution, reporting and accountability; and assuring that PHAC has robust emergency preparedness and response capability. Since May 2010, there is now a focal point at a senior level for emergency management in PHAC - an Assistant Deputy Minister, Emergency Management and Corporate Affairs.

As part of the process of making these changes, roles and responsibilities within PHAC have been clarified. This has in turn improved how information is shared both internally and with PHAC's food safety partners to ensure timely, informed decision making by officials.

STRENGTHENED LEGISLATION AND REGULATIONS

Health Canada and CFIA have worked together to review the five Canadian food statutes—the food provisions of the *Food and Drugs Act* and the *Consumer Packaging and Labelling Act*, the *Meat Inspection Act*, the *Fish Inspection Act* and the Canada Agricultural Products Act. Some improvements could be made to strengthen food safety, for example, by enhancing protections against willful contamination of food. As well, some provisions could be updated and others simplified, which would further encourage innovation and improve the competitive position of food producers and processors,

while maintaining food safety. Therefore the Government is developing a new food safety bill and will engage stakeholders on the elements of possible new food safety legislation.

ENGAGEMENT AND CONSULTATION WITH STAKEHOLDERS

CONSULTATION STRATEGY AND STAKEHOLDER ENGAGEMENT

The Independent Investigator recommended that CFIA create a formal and transparent consultation strategy that defines its required engagement with stakeholders such as industry, consumers, health professionals and the public health community, as well as other federal departments and agencies. CFIA has conducted an evaluation of the relevance and performance of its stakeholder consultation processes over a five-year period (2006-11). The work includes an assessment of CFIA's responsiveness to the Investigator's recommendation.

Findings indicate a continued need for stakeholder consultation. As a regulatory agency, CFIA is required to consult with stakeholders who may be affected by regulations, policies and programs. Their involvement enables the Agency to fulfill its legislative mandate, develop effective policy, design and deliver programs, and build public trust and commitment. In support of this role—and in direct response to the Investigator's recommendation—CFIA recently developed a Consultation Policy and Framework outlining a common process to guide the conduct of consultations. The draft Consultation Policy and Framework document was posted on the CFIA website and the "Consulting with Canadians" website on May 18, 2011, for a 30-day consultation. Submitted comments are currently being considered, and the document will be amended accordingly.

Evaluation findings indicate that CFIA has a strong history and culture of consultation, with significant skills and expertise. Responsibility for the design and conduct of consultation is dispersed within CFIA, allowing for flexibility in approach, responsiveness and the application of appropriate technical expertise. The Agency is meeting the policy goals of informing stakeholders and gathering input. Stakeholders generally view CFIA's consultations as open, meaningful and balanced, and they recognize their own influence in regulatory, policy and program development. However, the evaluation found that the Agency could provide more feedback to stakeholders in a timelier manner and that its consultations could be made more visible. CFIA is considering the results of this evaluation in order to improve its stakeholder consultations.

As a partner in food safety, CFIA has worked to bring the Investigator's recommendations to the attention of all federally registered meat processing establishments. These establishments received a letter dated March 5, 2010, outlining the industry-specific recommendations in the Weatherill Report, underlining their food safety responsibilities and the obligation of industry to report food safety threats as required under the *Meat Inspection Act* and its regulations.

CFIA also engages regularly with the food industry to discuss food safety issues, including the Weatherill Report recommendations.

CULTURE OF COMMITMENT:

"I believe that this final report is not the scorecard stating that the recommendations of Ms. Weatherill are implemented and the job is done, but in fact it is an acknowledgement of a reinvigorated culture of commitment to food safety. I find evidence of this culture of commitment in stakeholders' activities as they continuously seek ways to strengthen the food safety system—it is our individual and collective moral obligation."

Dr. Brian Evans, Chief Food Safety Officer for Canada

MEAT PROCESSING INDUSTRY RESPONDS

The Weatherill Report makes eight recommendations that are specific to the meat processing industry. Canada's meat industry agrees with all eight recommendations and has taken action to implement them.

Ms. Weatherill states that the chief executive officers (CEOs) and senior management of all meat processors should accept oversight responsibility for ensuring that food safety is fully embedded in every level of their business. As a result, senior managers responsible for quality assurance have had their job descriptions and titles updated to emphasize the importance of food safety, and now most of them report directly to their CEOs. More than ever, meat processing facilities employ highly qualified food science and microbiology experts to manage their food safety programs, and many firms have PhDs and veterinarians on staff.

CEOs and senior management are also asked to ensure effective design and active promotion of all aspects of food safety consistent with their food safety plans and to update their food safety plans regularly to ensure ongoing attention to pathogen control. All food safety Hazard Analysis and Critical Control Point plans are reassessed at least once a year. The importance of these plans is embedded in company culture. Meat industry experts have pooled their extensive knowledge to develop and share detailed guidance on the best practices for control of *Listeria* that all ready-to-eat meat processing companies can implement.

Companies have also invested in upgrading their equipment and reformulating their products to include approved antimicrobial substances that have proven highly effective against the growth of *Listeria*. Since 2008, seven Canadian meat processing companies have installed high-pressure processing systems to provide an additional barrier against potential contamination of their finished products by *Listeria* and other harmful bacteria.

To meet the recommendation that all meat processors should ensure that new and existing equipment is and remains appropriate for the intended use, the industry has set up a program of sanitation, inspection, disassembly and preventive maintenance for each piece of equipment. Companies have also invested heavily in new meat slicers and packaging equipment that are easier to clean and sanitize. Upgrading of equipment has resulted in not only better food safety performance but also improved productivity and longer product shelf life.

Ms. Weatherill notes that sanitation methods should be validated and implemented by meat processors in consultation with the equipment manufacturer. Processors ensure that each new piece of equipment is carefully inspected during installation; that training on dismantling and sanitation procedures is provided by the manufacturer; and that the meat-processing industry co-operates with equipment manufacturers on sanitation guidelines. The sector has developed effective validated procedures to sanitize equipment that is difficult to clean.

Another recommendation calls on all federally registered meat processors to disclose any threat to food safety to CFIA inspectors in a timely manner, not waiting for requests for information, and ensuring that inspectors have all the information they require. The meat industry discloses such threats to CFIA staff, and works with them to clearly understand the data presented and to draw accurate conclusions from the information.

Two of the recommendations are aimed not at meat processors but at equipment manufacturers, asking them to emphasize in their instructions to users the necessity of controlling the risk of pathogens, and to accept responsibility for the sanitary design of the equipment used by industry. Canada's meat industry views equipment manufacturers as partners in food safety and has witnessed a very high level of awareness and activity on the part of the equipment manufacturers in developing "best in class" equipment for pathogen control.

Canadian Meat Council

AGRI-SUBCOMMITTEE ON FOOD SAFETY

AAFC, in collaboration with the food industry, established the Agri-Subcommittee on Food Safety (ASFS) in 2010. The purpose of the ASFS, which includes members from CFIA, Health Canada and PHAC, is to strengthen relationships among all federal food safety partners and the food industry, to ensure a common understanding of the roles and responsibilities of all partners, and to contribute to the continuous improvement of food safety policies and standards. During each

meeting, industry and government members share information on new food safety developments in their sector or organization. The Subcommittee, which has met six times since June 2010, has also developed an industry-government work plan that takes into account key recommendations from the Weatherill Report.

“Meeting and exceeding our high food safety standards is vital to the food industry. We all have a responsibility to provide Canadians and our customers throughout the world with safe, high-quality food. Through the Agri-Subcommittee on Food Safety (ASFS), we’re fostering an enhanced level of dialogue between industry and government. The Subcommittee has watched with interest the progress made by federal partners in implementing the recommendations of the Weatherill Report. Industry members from the meat processing sector have also reported on how their sector has responded to the recommendations for which they are responsible.

Representatives from the major agricultural sectors participate and provide regular updates on the work they do to ensure that Canada is a world leader in food safety. Industry members regularly emphasize that food safety is viewed as a non-competitive area where information on new procedures and new technology are shared openly among participants for the benefit of all.

More broadly, subcommittee members have learned about proactive industry initiatives affecting food safety. Industry working with industry, and industry working with government, are key to effective and functional programs. We are all in this together and committed to Canada being a world leader in food safety.”

Mr. Dennis Laycraft, Industry Co-Chair of the Agri-Subcommittee on Food Safety (ASFS) and Executive Vice-President of the Canadian Cattlemen’s Association

EXPERT ADVISORY COMMITTEE

CFIA has established an Expert Advisory Committee (EAC) to provide the Agency with objective and technical advice on key issues related to its food, animal health and plant core business lines. Seven committee members have been selected based on their expertise, experience and knowledge in areas relevant to CFIA's mandate. Senior officials from AAFC, Health Canada and PHAC are also represented as committee members. The first meeting of the EAC took place in June 2011. EAC members were well engaged as they discussed and informed the development of guidance documents for the Agency's work.

MINISTERIAL ADVISORY BOARD

The Minister of Agriculture and Agri-Food has established the Ministerial Advisory Board, composed of six highly qualified advisors from the food, animal and plant health sectors. The Ministerial Advisory Board will advise the Minister on a broad range of issues that are relevant to CFIA activities, as is consistent with the Minister's responsibility for the Agency's overall direction.

CONSUMER ASSOCIATION ROUNDTABLE

In December 2010, the Canadian Food Inspection Agency launched a new roundtable focused on giving consumers an additional opportunity to raise concerns and discuss ways to further improve Canada's food safety system.

Members of the Roundtable discuss and provide input regarding food safety and other topics related to CFIA priorities, policies, programs and services that would benefit from consumer input.

The Consumer Association Roundtable is chaired by Canada's Chief Food Safety Officer and Chief Veterinary Officer, Dr. Brian Evans.

The Roundtable meets face to face at least twice a year and will also meet as required when topics of concern arise. The first three Consumer Association Roundtable meetings were held in December 2010, June 2011 and October 2011.

Eight core consumer associations with national or significant regional representation make up the Roundtable. Additional participants may be included, depending on the subject of the meeting. Current members of the Consumer Association Roundtable are:

- Anaphylaxis Canada;
- Association québécoise des allergies alimentaires;
- Canadian Association of Retired Persons (CARP);
- Consumers' Association of Canada;
- Consumers Council of Canada;
- Dieticians of Canada;
- Option consommateurs; and
- People's Food Policy Project.

FEDERAL/PROVINCIAL/TERRITORIAL COLLABORATION

FPT health ministers have agreed that food safety constitutes a priority area for the health sector, and that collaboration is needed with the agricultural sector in order to have a more integrated Canadian food safety system. From a health sector perspective, the deputy ministers of health have agreed to move forward on three priorities: enhanced and integrated food and human illness surveillance, prevention of foodborne risks through targeted interventions, and outbreak preparedness response.

FPT ministers of agriculture have also been working to advance three food safety priorities that will make important contributions to meeting the challenges faced by consumers and producers in Canada. These priorities include the development

of a national meat hygiene standard to facilitate interprovincial trade; a systematic pathogen reduction strategy for meat and poultry; and better linkages among food safety and human health surveillance information sources to improve targeted interventions and manage foodborne illness outbreaks more effectively.

Discussions at senior levels have revealed the need for the Health and Agriculture Portfolios to proactively collaborate in efforts to mitigate food safety risks and reduce the likelihood of future outbreaks through action in priority areas of mutual interest. Stronger FPT linkages also serve to strengthen response mechanisms, which are essential to promptly address emerging food safety events.

Collaboration is supported through the joint Agriculture and Health FPT Food Safety Committee, which constitutes a network of food safety officials across Canada working towards common food safety objectives.



IMPACT OF ACTIONS ON IMPROVING CANADA'S FOOD SAFETY SYSTEM

The actions taken to meet the Weatherill Report recommendations have had a widespread positive impact on Canada's food inspection and foodborne illness outbreak response systems. Results from a recent survey conclude that Canadians are generally confident in the food safety system, with 89 per cent expressing, at a minimum, moderate confidence.⁸

The Government has enhanced its overall performance and effectiveness in managing food safety risks, identifying new and emerging food safety issues, and responding to food safety events when they arise. There is heightened awareness of the significance and high priority of food safety at all levels of government.

Many improvements are specific to the risks of *Listeria monocytogenes* in RTE foods, such as the comprehensive review and revision (2011) of Health Canada's *Listeria* policy, the introduction of tests designed to identify *Listeria monocytogenes* more quickly, and increased surveillance of *Listeria* through the National Enteric Surveillance Program (NESP). These and other changes have reduced the risk of an outbreak of listeriosis and will ensure that if an outbreak were to occur, it would be more swiftly detected and the outbreak response more quickly initiated.

In addition, changes in how organizations work together; in the regulatory framework; and in the priority areas of reducing food safety risks, enhancing surveillance, and improving the outbreak or emergency response will result in better management not only of *Listeria monocytogenes* but also of all foodborne hazards.

⁸ *Food Safety: Canadians' Awareness, Attitudes and Behaviours*. Léger Marketing, July 2011, p. 15.

GOVERNANCE

The work of the Special Committee of Deputy Heads (SCDH), which was formed to oversee the coordination of the implementation of the Weatherill Report recommendations, has improved interaction and collaboration among the organizations responsible for food safety. In addition, communication channels and information-sharing mechanisms are now more extensive as a result of the SCDH. The Committee receives real-time information updates from the CPHO of Canada and the CFSO for Canada on any potential food safety initiatives and issues. In addition, SCDH partners have strengthened their relationships and created a culture in which information is shared among partners so that when a food safety incident occurs, they are in a much better position to take effective action. The SCDH structure provides a platform for ongoing collaboration to enhance the food safety system's ability to anticipate and proactively address emerging issues.

PREVENTION: MINIMIZING THE RISK OF FOODBORNE ILLNESS

Today, Canadians are at a lower risk of exposure to contaminated RTE meat through the work of the meat processing industry and regulators to improve environmental testing and food sample testing for the presence of pathogens such as *Listeria monocytogenes* at meat processing plants. The Government promised to hire new food safety staff and has hired 170 full-time food safety inspectors, as well as additional health risk assessment staff. Investments in new inspector tools, technology and training have improved efficiency and ensured that inspectors have the necessary resources to provide effective oversight of industry food safety systems. There is also a wider range of possible food safety interventions for the food industry to use through an accelerated approval process for new food additives and technologies of public health relevance. Consumer food safety education

campaigns—in particular with the aim of educating and protecting vulnerable populations before and during a foodborne illness outbreak—have reached a large audience through the use of social media, as well as more traditional means of communication.

SURVEILLANCE AND DETECTION: KEEPING TRACK OF FOOD SAFETY HAZARDS

The Government undertook to improve national public health surveillance to better link cases of foodborne illness and more rapidly identify outbreaks. By taking action on the Weatherill Report recommendations on surveillance and detection of foodborne pathogens like *Listeria monocytogenes*, jurisdictions are better able to detect outbreaks more quickly. Faster detection is made possible through the development and availability of improved and innovative, rapid, reliable laboratory procedures and detection methodologies for hazards in food. Action has also been taken on the development of a network of networks, which will further improve future surveillance and detection activities through the integration of laboratory networks.

RESPONSE TO OUTBREAKS OF FOODBORNE ILLNESS

Improvements to the FIORP, the Government's blueprint for handling multi-jurisdictional foodborne illness outbreaks, and the development of the Health Portfolio FI ERP provide greater clarity on how to manage outbreak and emergency situations. The FIORP (2010) has been instrumental in helping the Government answer its commitment to improve coordination among federal and provincial departments and agencies. Roles and responsibilities are clearer, information sharing and communication guidelines are in place, support is enlisted and internal surge capacity is identified, should an outbreak occur.

New reporting structures for the OFSR have enhanced communication and made recall operations more effective.

The Weatherill Report notes problems with the food safety system under four themes. The Government's action on each one is described here:

1. the focus on food safety among senior management in both private and public domains

In the public domain, changes in governance such as the appointment of Canada's Chief Food Safety Officer ensure that senior management is engaged in food safety events from the start. The revised Foodborne Illness Outbreak Response Protocol has clarified the division of responsibility and decision making among authorities when dealing with an outbreak of foodborne illness. Communication between regulators and the food industry has improved senior management oversight of food safety in processing plants, while changes to policies and directives have provided clear direction to inspectors and industry on their responsibilities for food safety.

2. the state of readiness of various governments

The Government's efforts to improve its advance planning and preparation, in consultation with other jurisdictions and with the food industry, mean that Canada is now better able to prevent, detect and rapidly deal with outbreaks of foodborne illness. Improved laboratory methods and surveillance and expedited processes to approve risk mitigation interventions contribute to an increased state of readiness. Staff available to provide emergency surge capacity have been identified, 24/7 risk assessment capacity has been developed, emergency staff are being trained and the training of food inspectors has been enhanced to ensure readiness.

3. the sense of urgency at the commencement of the outbreak

The revision and testing of protocols such as the FIORP and the development of the FI ERP lay the essential foundation for responding to foodborne illness outbreaks and emergencies. The weight-of-evidence document sets out criteria to inform decisions on appropriate risk management actions, including public warnings. Protocols clearly direct when emergency operations centres should be activated and what role authorities at the national level have in managing an outbreak of foodborne illness.

4. national communications with the public

The development of the Food Safety Portal, the Food Safety Communications Protocol, and information aimed directly at higher-risk groups have all served to greatly improve communication to Canadians during an outbreak and to provide information that consumers can use to help prevent foodborne illness. The document *Prevention of Listeriosis: Considerations for Development of Public Health Messages* helps to guide the work of local, provincial, territorial and federal governments in informing caregivers and in developing policies on food preparation in care facilities. In the event of an outbreak, the Chief Public Health Officer of Canada is the chief spokesperson to provide information to Canadians on how they can protect themselves during a multi-jurisdictional foodborne illness outbreak.

CONCLUSION

As this report describes, Canadians can be assured that the Government of Canada has acted on all of the recommendations made by the Independent Investigator, as demonstration of its commitment to the safety of food as one of its highest priorities.

The commitment of \$75 million announced in September 2009 demonstrated the Government's intention to move quickly on these recommendations. In Budget 2010, CFIA was allotted an additional \$13 million annually for two years to fund increased inspection capacity for meat and poultry processing facilities. Budget 2011 provided a further \$100 million over five years to invest in inspector training, tools and technology, and science capacity. The funding will allow CFIA to implement a risk-based and proactive inspection system, with enhanced science capacity to support risk-based decision making, and improved information management technology to enable modernization. These investments build on the Government's 2008 commitment to invest \$489.5 million over five years in the Food and Consumer Safety Action Plan.

The Government of Canada will continue to review and adjust its food safety standards, policies and operational procedures to ensure that its oversight of food safety remains effective. In our complex and increasingly integrated global economy, with food sources and food production-and-distribution methods in a state of continual change, vigilance is required, both of regulators and of the food industry, to ensure prevention and the effective management of new and emerging risks to food safety.

Clearly, there is always more work to be done. The food safety system requires collaboration among government partners, industry and consumers. Collective effort and sustained action are necessary to be able to respond to new and emerging risks that foodborne illness can pose to Canadians. Strengthening the food safety system is a continuous process to which the Government of Canada is fundamentally committed.

“This final report is not an end. Rather, it is a cornerstone for continued investment and improvement in food safety in Canada. This report represents an opportunity to recommit to the need for constant and collective efforts by federal and provincial/territorial governments, the food industry and consumers.”

Dr. Brian Evans, Chief Food Safety Officer for Canada

GLOSSARY

Agriculture Portfolio: includes Agriculture and Agri-Food Canada and the Canadian Food Inspection Agency.

Codex Alimentarius Commission: an international body established by the United Nations Food and Agriculture Organization (FAO) in partnership with the World Health Organization (WHO) to develop food standards, guidelines and codes of practice under the Joint FAO/WHO Food Standards Programme. These are internationally recognized standards, guidelines and codes of practice intended as recommendations which governments can implement to facilitate the export of their countries' products.

Deputy head: the highest ranking public servant in a federal department or agency, who reports to the Minister. In some federal agencies the position is called President or Commissioner.

DNA fingerprint: the specific genetic pattern of a pathogen that is used as laboratory evidence for outbreak detection. Health officials can identify clusters of illnesses caused by bacteria with the same fingerprint at the same time, even when cases of illness are spread across many jurisdictions. The DNA fingerprint evidence is also used to link contaminating pathogens in foods to the associated cases of disease.

Environmental sampling: a method of testing for micro-organisms on surfaces that could come in contact with food in a food processing plant. Swabs are taken from these surfaces and tested in order to determine if any harmful bacteria are present.

Foodborne illness: an illness caused by eating or drinking a contaminated food or beverage.

Foodborne outbreak: occurs when two or more people get the same illness from the same contaminated food or beverage.

Genomics: a branch of biotechnology concerned with applying the techniques of genetics and molecular biology to the genetic mapping and DNA sequencing of sets of genes or the complete genomes of selected organisms, with organizing the results in databases, and with applications of the data.

Hazard Analysis and Critical Control Point: an internationally recognized approach to food safety that is designed to assess and control hazards and risks associated with food production.

Health Portfolio: includes Health Canada and the Public Health Agency of Canada.

International Health Regulations: an international legal instrument that is binding on 194 countries across the globe, including all the Member States of the World Health Organization. Their aim is to help the international community prevent and respond to acute public health risks that have the potential to cross borders and threaten people worldwide.

Lead agency: the agency that has responsibility for the overall management of a foodborne illness outbreak.

Listeria: scientific classification used to describe seven species of bacteria, including the *Listeria monocytogenes* species that, of the *Listeria* group, most frequently causes illness (listeriosis) in humans.

Listeriosis: an infection caused by eating food contaminated with *Listeria monocytogenes*. Those most at risk include elderly patients, pregnant women and patients who have compromised immune systems.

Multi-jurisdictional: when more than one province, territory or country is affected by a foodborne illness event and is involved in responding to the outbreak.

Novel food: includes substances that do not have a history of safe use as a food; foods that have been manufactured, prepared, preserved or packaged by a process that has not been previously applied to that food, and causes the food to undergo a major change; and foods that are derived from a plant, animal or micro-organism that has been genetically modified such that the substance no longer exhibits characteristics that had been seen, exhibits new characteristics not previously seen, or one or more characteristics that fall outside the anticipated range for that substance.

Outbreak: a sudden increase in disease greater than would otherwise be expected, usually caused by a single contaminated source.

Pathogen: microbes such as bacteria, viruses, parasites or fungi that cause illness and/or infections in a specific host.

Public health surveillance: the systematic process of collecting, analyzing, interpreting and communicating data in order to reduce disease rates and mortality. In Canada, surveillance is used to monitor, respond to and prevent human illness, including chronic and infectious disease.

Pulsed Field Gel Electrophoresis: the scientific laboratory method used to identify characteristic genetic traits for pathogenic microbes, commonly referred to as “fingerprinting,” that can be used as evidence for food safety and public health investigations.

PulseNet: a network of public health and food safety laboratories and agencies that perform DNA fingerprinting and share these pieces of laboratory evidence to support outbreak detection.

ACRONYMS

AAFC	Agriculture and Agri-Food Canada
CFIA	Canadian Food Inspection Agency
CFSO	Chief Food Safety Officer
CNPHI	Canadian Network for Public Health Intelligence
CPHO	Chief Public Health Officer
CVS	Compliance Verification System
FI ERP	Foodborne Illness Emergency Response Protocol
FIORP	Foodborne Illness Outbreak Response Protocol
FIRM	<i>Food Investigation and Response Manual</i>
FPT	Federal/Provincial/Territorial
FSEP	Food Safety Enhancement Program
HPEOC	Health Portfolio Emergency Operations Centre
HP ERP	Health Portfolio Emergency Response Protocol
ICS	Incident command structure
IMS	Incident management system
NESP	National Enteric Surveillance Program
OCT	Outbreak Communications Team
OICC	Outbreak Investigation Coordination Committee
PHAC	Public Health Agency of Canada
RTE	Ready-to-eat
SCDH	Special Committee of Deputy Heads