Canada-U.S. Food Safety Risk Assessment Organization: Case Study

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Objective

To present and illustrate the concept of a Food Safety Risk Assessment Organization (FSRAO) for achieving food safety regulatory cooperation between Canada and the U.S.
Current Context
Risk Analysis

Structure:

Risk Assessment
• Hazard identification
• Hazard characterization
• Exposure assessment
• Risk characterization

Risk Management
• Risk evaluation
• Option assessment
• Option implementation
• Monitoring and review

Risk Communication

Source: FAO Corporate Document Repository. A primer on risk assessment modelling: focus on seafood products...
Available at: http://www.fao.org/docrep/009/a0238e/A0238E01.htm
Data Ideal

Data ideally should be:

• collected across whole food safety system
• accessible
• transferable
• comparable
• credible
• objective

Data Reality

Data, in reality, are:

• collected through different networks, agencies and research groups
• not communicated among the various agencies or third-parties
• isolated and not integrated through a strategic approach to identify information needed for risk-based decision-making

## Foodborne Illness – U.S. Initiatives

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<th>Program</th>
<th>Agencies</th>
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| **FoodNet** (Foodborne Diseases Active Surveillance Network) | CDC, FDA, USDA-FSIS, 10 states | • Conducts active population-based surveillance for laboratory-based confirmed cases to provide estimates of foodborne illness associated with 9 pathogens.  
• Provides foundation for food safety policy and prevention efforts in the US. |
| **PulseNet** (National Molecular Sub-typing Network) | CDC, state public health laboratories | • National laboratory network that connects foodborne illness cases to detect outbreaks.  
• Performs DNA fingerprinting on potential foodborne bacteria to connect cases with common sources.  
• Provides early warning for outbreaks of foodborne disease. |
| **FDOSS** (Foodborne Disease Outbreak Surveillance System) | CDC | • Collects data on foodborne disease outbreaks.  
• Provides insight into agents and foods that cause illness and the settings where food are prepared. |
| **FERN** (Food Emergency Response Network) | FDA, USDA, CDC, EPA, state agencies | • Integrates the nation’s food testing laboratories at all levels  
• Provides early warning and response of widespread complex threats of contamination in the food supply. |
| **eLEXNET** (Electronic Laboratory Exchange Network) | FDA, USDA, DoD | • Central food testing repository for collaborating, comparing, sharing and coordinating food testing data at all levels.  
• Serves as a risk assessment and trend analysis tool. |
| **Epi-X** (Epidemic Information Exchange) | CDC | • Supports a web-based communication tool limited to designated public health professionals at state and local levels to share and access preliminary health surveillance information. |

# Foodborne Illness – Canadian Initiatives

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<th>Program</th>
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<td>CNDSS (Canadian Notifiable Disease Surveillance System)</td>
<td>PHAC (National Microbiology Laboratory and Centre for Foodborne, Environmental and Zoonotic Infectious Diseases)</td>
<td>• Collects annual numbers of laboratory-confirmed illnesses, reported voluntarily by provincial and territorial public health authorities to produce national counts and rates presented on Notifiable Diseases Online.</td>
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| NESP (National Enteric Surveillance Program) | PHAC | • Collects weekly numbers from provincial health laboratories on select bacteria, parasites and viruses at subtype and species level.  
• Provides analysis and trends of laboratory confirmed enteric disease cases to submitting laboratories, federal and provincial epidemiologists, researchers, and public health professionals.  
• Integrates data from PulseNet Canada and international collaboration. |
| Enhanced National Listeriosis Surveillance | PHAC, provinces and territories | • Collects detailed information on invasive listeriosis cases in participating provinces and territories. |
| FoodNet Canada | PHAC, AAFC | • Collects information on cases of infectious gastrointestinal illness and sources of exposure in specific communities across the country. |
| Provincial & Territorial Reportable Disease Surveillance System | Local health units | • Collects the number of laboratory-confirmed illnesses reported by local public health units and authorities for a set of diseases |
| PulseNet Canada | PHAC (National Microbiology Laboratory), province public health laboratories, 2 federal laboratories | • Critical surveillance to quickly identify and respond to foodborne outbreaks  
• Electronic network connects databases and computers from provincial and some federal public health laboratories.  
• Performs close to real time molecular subtyping. |

Foodborne Illness – Industry

• Quality assurance programs
  • e.g. tests for foodborne pathogens, indicator microorganisms in facilities, products
  • information can assist identification and traceability, but also aid in understanding the ecology of pathogens

• Food safety data gathered during inspections can help to understand potential weaknesses

Foodborne Illness – Current Collaboration

• VoluntaryNet
  • CDC with University of Georgia’s (UGA) Center for Food Safety and food companies
  • Engages industry in enhancing foodborne illness surveillance and outbreak response activities
  • Provides food industry partners with indirect access to PulseNet data
  • Companies can share testing results anonymously with other food companies and CDC

• PulseNet
  • International Molecular Subtyping Network
  • PulseNet U.S.
  • PulseNet Canada
Why data sharing and scientific collaboration is relevant
Disjointed Science

Examples:

- Listeria in RTE food
- GRAS approval process
- Allergens - Canada recognizes sesame, shellfish, mollusks and mustard
- Methodologies for pathogen testing
- New technology / product approvals

Sources:
How to integrate risk assessment in North America?
European Food Safety Authority (EFSA)

Model:

- Request for scientific advice?
  - EFSA
    - Panels of Scientific Experts
    - Scientific Committee
      - Scientific opinion
        - Working Group of Experts
          - Draft scientific opinion
            - EFSA
              - European Commission
              - European Parliament
              - Policy-making Risk Management

Food Standards Australia-New Zealand

- FSANZ is responsible for standard setting, developing and maintaining the Australia-New Zealand Food Standards Code
  - Labelling, composition and contaminants, food safety (AU), MRLs (AU), primary production and processing (AU).
- Ensures standards are based on risk analysis
  Risk assessment → decision-making (Code modifications) → communication

Working History: Canada-U.S.
1912
International Joint Commission (IJC)

2007
U.S. EPA and CPMRA
first joint approval of a NAFTA harmonized label for a pesticide

2011
Canada-U.S. Regulatory Cooperation Council (RCC) Joint Action Plan
• Common Electronic Submission Gateway
• Globally Harmonized System of Classification and Labelling of Chemicals

2014
Canada- U.S. RCC Joint Forward Plan
• Joint review and approval of a veterinary drug product

2016
Canada- U.S. Food Safety Systems Recognition Arrangement (FSSRA)

FSSRA

Food Safety Systems Recognition Arrangement:

• FDA, CFIA and Health Canada
• Increases the exchange of information
• Promotes a formal mechanism for scientific exchange and collaboration
• Opens new opportunities for collaboration on risk-informed decision-making
• Enhances regulatory cooperation
• Excludes:
  • meat, poultry, processed egg products, catfish, grade A milk/products, raw bivalve molluscan shellfish, dietary supplements and natural health products

Conclusion
Food Safety Risk Assessment Organization

FSRAO would promote:

• Exchange of scientific information and collaboration between both countries during the risk assessment stage
• Independence
• Innovation in both countries by keeping pace with science, industry and society
• Strong, well established network of experts for cooperation and exchange of knowledge
• Improved and consistent risk assessment practices that can be used throughout Canada, U.S. and eventually NA

Sources:
It’s about Harmonization…

• Starting from a common foundation, based on common science, Canada and the U.S. can build towards a higher degree of regulatory harmonization

• This will help reduce:
  • unwarranted and contradictory regulatory requirements
  • redundant applications of similar requirements by different authorities
  • administrative burdens and costs for industry and government in both countries

Sources: