



PUBLIC HEALTH AGENCY *of* CANADA
AGENCE DE SANTÉ PUBLIQUE *du* CANADA

Manitoba – October 30, 2009

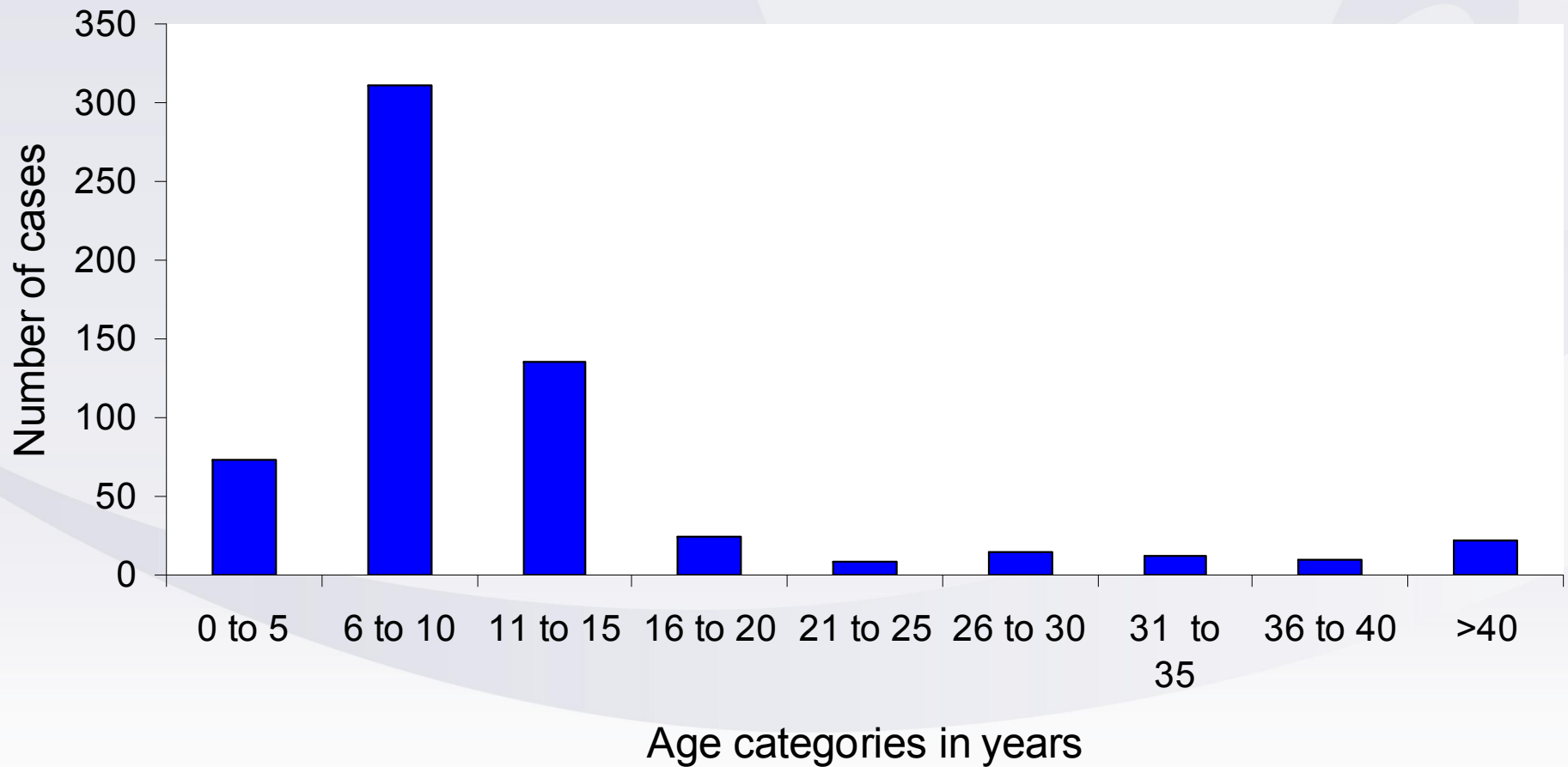


Public Health
Agency of Canada

Agence de santé
publique du Canada

Canada 

Age distribution of cases of *S. Enteritidis* part of a national outbreak, Canada, 1998





Foodborne Illness Outbreak Response Protocol (FIORP)

- Developed in 1999 by Health Canada, CFIA, P/Ts
- Endorsed in 2004 by CCMOH, FPT Committee on Food Safety Policy, Deputy Ministers of Health
- Under revision and review in 2009/10
- PHAC, HC and CFIA have reviewed and revised the FIORP
- P/Ts currently reviewing the revised version and providing input

Foodborne Outbreak Scenarios

Traditional scenario

- Cases clustered in time and space
- Common meal or event
- Often result of a food handling error

New scenario

- Seemingly unlinked cases
- Widely distributed foods
- Food with long-shelf life or ready-to-eat, requiring no/little consumer handling

Detecting an outbreak

Traditional scenario

- Detected locally by
 - Doctor
 - Local public health
 - Community
- Rely on syndromic surveillance and good relationships

New scenario

- Detected by the lab
 - Rare serotype
 - Subtyping (phage typing, PFGE)
 - Antimicrobial resistance
- Rely on lab-based surveillance and communication between lab and epi

FIORP



- General principles and operating procedures for coordination and response
- Define roles and responsibilities
- Outbreaks with multi-jurisdictional implications
- Focus on information exchange and collaboration between agencies
- Addresses
 - Investigation – epidemiology, laboratory, food safety
 - Evidence for action
 - Public communications
 - Declaring the outbreak over/post outbreak review

FIORP: General Principles

- FIORP will guide multi-jurisdictional response
- Partners will exchange relevant information
- Outbreak Investigation Coordination Committee forum for information exchange and coordination
- Laboratory, epidemiological and food safety information accepted to establish source
- Disclosure of food product once reasonable link established

Foodborne Illness Investigation

Responsibility for response to foodborne illness outbreaks is shared by:

- Local and regional health authorities
- Provincial/Territorial governments
- Federal government agencies
- International Partners (CDC, WHO)

FIORP Partners

- Local Public Health
- Provincial/Territorial Governments – Health and Agriculture
- Public Health Agency of Canada
- Canadian Food Inspection Agency
- Health Canada



Public Health Agency of Canada (PHAC)

- Established in September 2004, in part as a response to the SARS outbreak in 2003
- **Mission:** To promote and protect the health of Canadians through leadership, partnership, innovation and action in public health.
- **Vision:** Healthy Canadians and communities in a healthier world.

PHAC's Role

A large, light blue, stylized graphic in the background depicts several human figures holding hands in a circle, symbolizing community and public health. The figures are simplified, with circular heads and rounded bodies.

- Prevent disease and injury
- Promote health
- Prepare and respond to health emergencies
- Research, surveillance
- Strengthen the public health system

FIORP: Roles and Responsibilities

Public Health Agency of Canada: Centre for Food-borne Environmental and Zoonotic Infectious Diseases (CFEZID)

- First point of contact potential foodborne outbreak issues
- Leads multi-jurisdictional, international outbreak investigations
- Interprets/comments on strength of epi evidence*
- Provides consultation, content expertise as requested by P/Ts
- Provides training in outbreak response

Outbreak Management Division

CFEZID

- Monitors PulseNet discussion board daily
- Meets weekly with:
 - Surveillance Division, CFZID to review NESP data
 - PulseNet Canada, NML to review clusters by PFGE
- Prioritizes multi-P/T issues for follow-up
 - No action required
 - Monitor
 - Conduct assessment to confirm/rule out outbreak

Outbreak Management Division

CFEZID

- Monitor surveillance and prioritize issues for follow-up
- Provide consultation, content expertise as requested by P/Ts, CFIA, Health Canada
- Lead multi-jurisdictional outbreak investigations
- Contribute to policy and protocol development
- Provide training in outbreak response
- Outbreak tools and online toolkit development

Outbreak Management Division

CFEZID

- Mon:** Federal Food Safety Teleconference
- Wed:** Review NESP data
US/Canada outbreak teleconference
- Fri:** Review clusters with PulseNet
- Daily:** Monitor Epidemiologist duties
Standby Epidemiologist duties
If issue identified/ongoing:
Brief Sr Management, PHAC
Brief CFIA, Health Canada

Outbreak Management Division

CFEZID

Table 2 – Investigations by Pathogen

Pathogen	#	%
<i>Salmonella</i>	18	34%
<i>Escherichia coli</i>	12	23%
<i>Clostridium</i>	9	17%
<i>Listeria</i>	6	11%
Cyclospora	2	4%
Norovirus	2	4%
Hepatitis A	1	2%
Melamine	1	2%
Multiple	1	2%
Giardia	1	2%
Total	53	100%

Table 3 – Method by which Division was informed of the Issue

Notified By:	#	%
P/T	14	26%
NML	10	19%
CDC	8	15%
HC LAB	7	13%
CFIA	5	9%
NESP	4	8%
CIOSC	2	4%
LOCAL HU	2	4%
OTHER	1	2%
Total	53	100%

Outbreak Management Division

CFEZID

Requests for data from P/Ts

- Case information to inform initial assessment of clusters, increases detected
- Additional case details using standardized outbreak questionnaire
- Precise location of purchase and food product details to inform CFIA traceback

FIORP: Roles and Responsibilities

Public Health Agency of Canada: National Microbiology Laboratory (NML)

- Usual first point of contact for cluster detection
- Strain identification, characterization
- Disseminates information through PulseNet
- Interprets and comments on strength of laboratory evidence
- Provides consultation, microbiological expertise

National Enteric Surveillance Program (NESP)

- Administered by NML and CFEZID
- Weekly, aggregate, laboratory-based
- Purpose
 - Monitor trends over time and geography
 - Detect increases across jurisdictions
- Pathogens (under review)
 - *Salmonella*, *Campylobacter*, *Shigella*, *Vibrio*, *E. coli*, *Yersinia*, *Giardia*, *Cryptosporidium*, *Entamoeba*, Rotavirus, Norovirus

National Enteric Surveillance Program (NESP)

Weekly NESP News

NESP Annual Reports

PHAC

Aggregate number of isolates

**Provincial/Territorial
Laboratories**

Private lab

Hospital lab

Physician

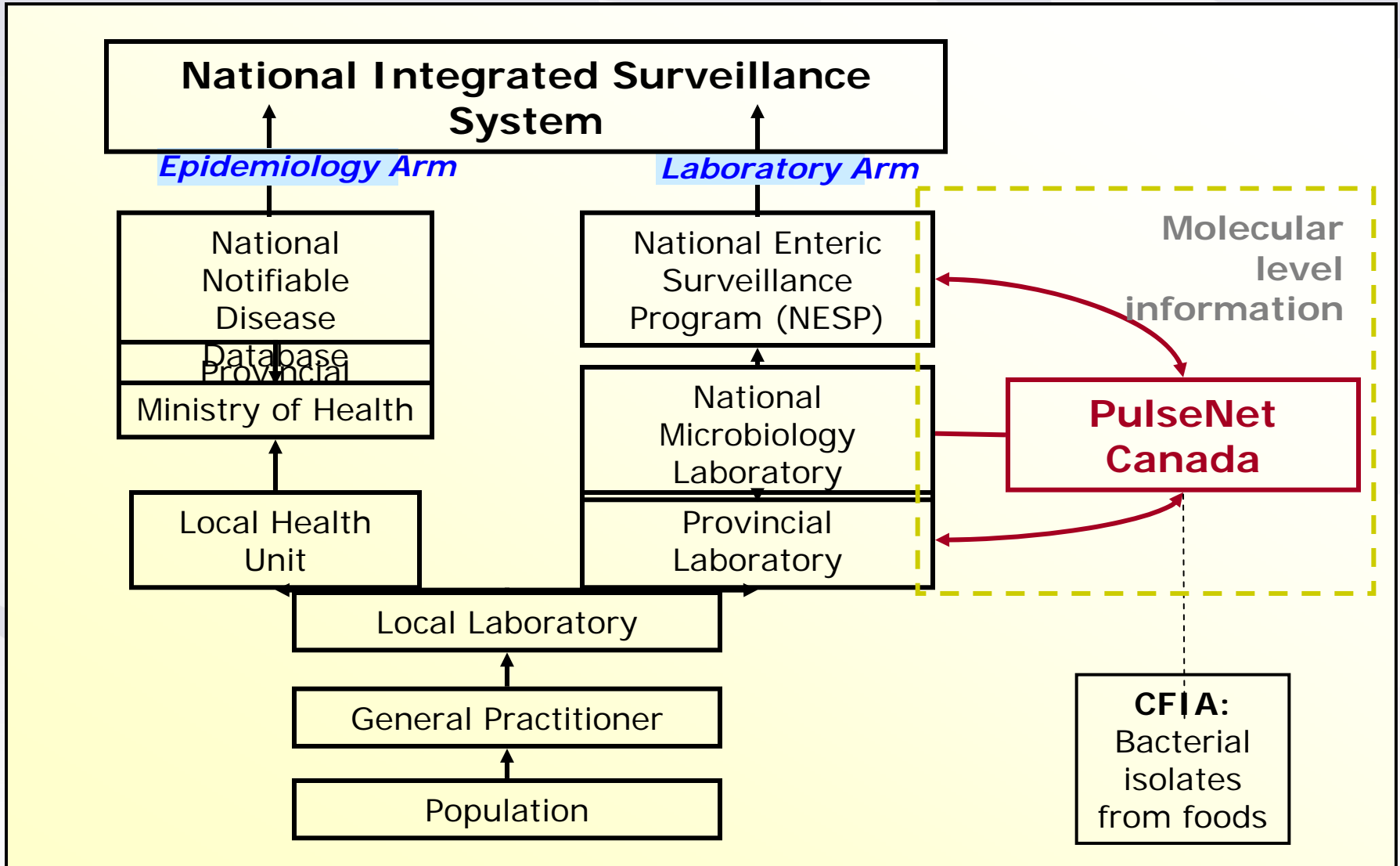
Individual

PulseNet Canada



- Enhances detection of outbreaks that would otherwise be missed
- Increases specificity of case definitions
- Detects outbreaks an earlier stage
- Links outbreaks with potential sources for hypothesis generation and confirmation

PulseNet Canada



FIORP: Roles and Responsibilities

Public Health Agency of Canada:

Laboratory for Foodborne Zoonoses (LFZ)

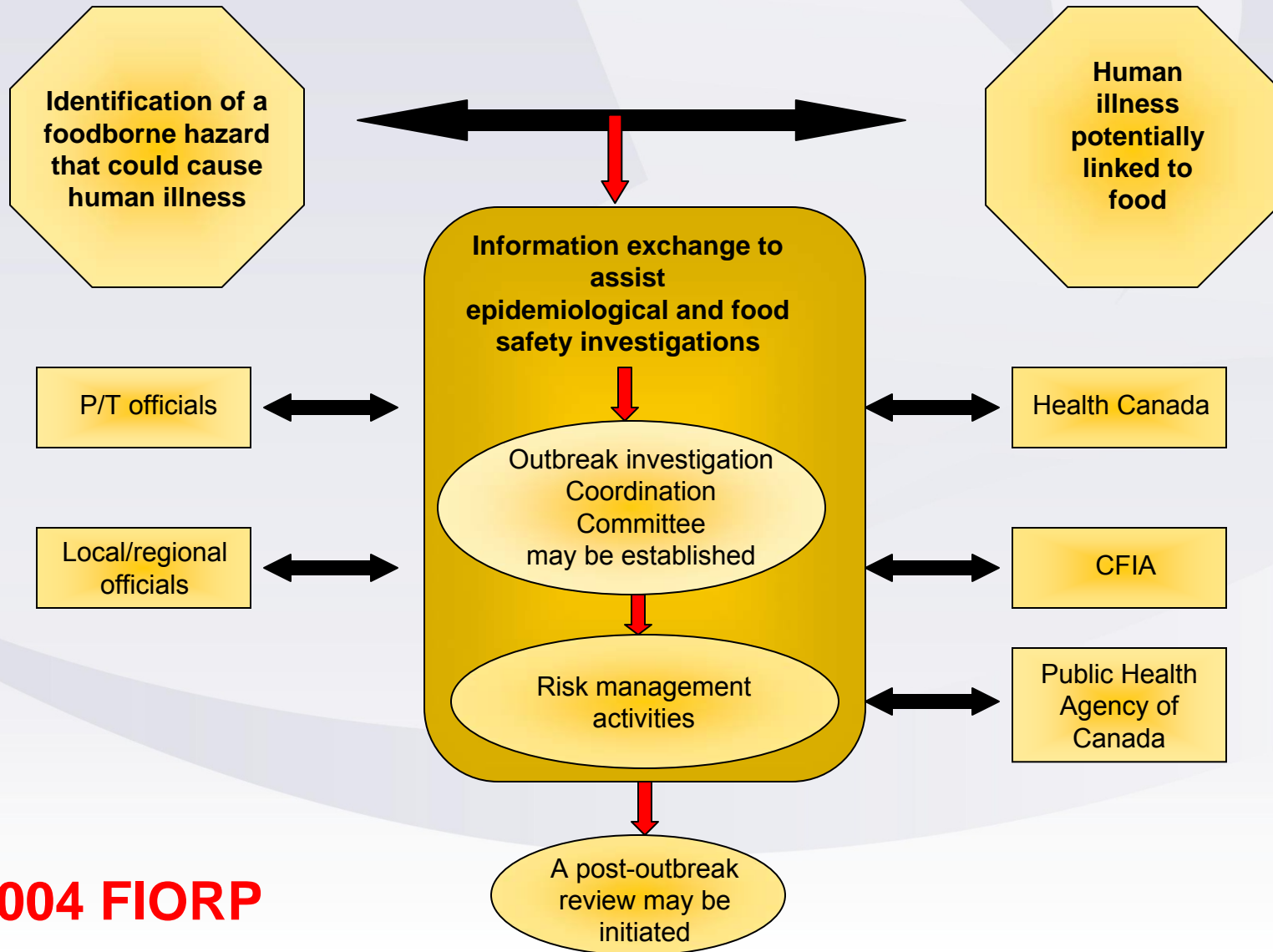
- Reference services for animal and food strain differentiation
- Laboratory based surveillance and research

FIORP: Roles and Responsibilities

Public Health Agency of Canada: Canadian Field Epidemiology Program (CFEP)

- Deploys Field Epidemiologists to assist in field investigations
- Provides training in applied epidemiology

FIORP: Identifying Potential Foodborne Illness Outbreak



2004 FIORP

FIORP: Assessment of Information – Determination of Potential Outbreak

CFIA Foodborne Hazard

- Consumer complaints
- Food processing deviations
- Laboratory reports
- Notification from industry
- External information about a food safety problem

PHAC Human Illness

- Local/regional officials identify outbreak
- National or P/T surveillance activities identify an outbreak
- International outbreak with the potential to affect Canada

Indicators of Multi-jurisdictional Foodborne Outbreaks

- Increase in infections with common subtype identified across jurisdictions
- Illnesses associated with multiple food service establishments especially if same chain
- Following foods suspected:
 - Commercially distributed, processed or ready-to-eat food
 - Fresh produce

FIORP: Outbreak Investigation Coordination Committee (OICC)

Purpose

- Forum for information exchange
- Consensus on direction of investigation and public health action
- Recommend and harmonize public communications

Composition

- Laboratory
- Epidemiology
- Food safety
- Communications

FIORP: Outbreak Investigation Coordination Committee (OICC)

OICC Lead

- Outbreak in multiple health regions in one P/T
→ P/T leads
- Outbreak in more than one P/T or international dimension
→ PHAC leads
- CFEZID may defer to P/T if majority of cases occurring in one P/T and formal investigative team established

FIORP - OICC Activities

- Information Sharing and Exchange
- Epidemiological Investigation
- Laboratory Investigation
- Food Safety Investigation
- Centralized Data Analysis
- Weight of Evidence/Assessment
- Public Health Actions – Communication/Recall
- Outbreak Closure/Post Outbreak Review



**Multi-jurisdictional foodborne
outbreak investigation: a true
collaborative effort among partners
guided by the FIORP**