

# **Foodborne Disease Investigation; FSIS Roles and Partner Interaction**

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# Roles and Responsibilities

- **Collaborate with public health partners to investigate potential foodborne illness associated with FSIS-regulated food products**
  - **Meat**
  - **Poultry**
  - **Egg Products**
- **Monitor foodborne illness**

# Roles and Responsibilities

- **Assist with traceback of FSIS-regulated foods implicated as sources of foodborne illness**
- **Work with partners to collect and sample foods implicated in foodborne illness**
  - **Link illnesses to product**
  - **Identify relationships between cases**

# Roles and Responsibilities

- **Serve as liaison and technical expert on food safety issues**
- **Analyze information involving foodborne pathogens**
  - Advise FSIS leadership on human health impact
- **Refer public health partners to educational resources for consumers**
  - Food safety, food security, foodborne illness

# Investigation Objectives

- **Verify the association**
- **Identify the source of production**
- **Prevent further exposures of consumers**
- **Initiate regulatory action (when indicated)**
- **Identify contributing factors**
- **Prepare an internal summary and lessons learned**

# Step 1: Human Health Surveillance

- **Ongoing disease surveillance conducted by**
  - Local, State and Territorial health departments
  - U.S. Centers for Disease Control and Prevention (CDC)
- **Ongoing monitoring of foodborne disease reports by FSIS**
  - Epidemiology Officers in Omaha and Atlanta
  - FSIS liaison to CDC in Atlanta

# FSIS Notification of Foodborne Illness

- **State, territorial, and local health departments**
- **FDA, CDC**
- **PulseNet**
- **ProMed, FSNet, Food Safety e-News**
- **Industry**
- **News Media**

# Step 1: Human Health Surveillance

## August 2002 – Investigation Example

- FSIS learns of increase in cases of *Listeria monocytogenes* in Pennsylvania (PA)
- Pulse Field Gel Electrophoresis (PFGE) pending
- No common food exposure recognized
- CDC reports to Philadelphia, PA



# Step 2: Illness Reported; FSIS Product Suspected

- **FSIS receives epidemiologic data from other public health agencies**
- **FSIS judges the strength of the association using recognized criteria**
  - **Sequence of events; biological plausibility; specificity; dose response; relative risk/odds ratio**
- **FSIS determines that further action is necessary**

# Step 2: Illness Reported; FSIS Product Suspected

## September 2002 – Investigation Example

- 7 of 12 isolates are indistinguishable by PFGE analysis
- CDC leads a multistate case-control study
  - FSIS reviews the epidemiologic data
  - Identify exposure to turkey deli meat as the risk factor for illness



# Step 3: FSIS Begins Investigation

- **Traceback and Traceforward**
- **Microbiological Results**
  - Product
  - Clinical
  - Environmental
- **In-plant Assessment**

# Product Traceback Investigations: What We Need to Know

## ● Who?

- Producing establishment number

## ● What?

- Name and type
- Lot number
- Product code
- Product weight and units per case
- Percent lean

## ● When?

- Production code
- Sell by/use by date

## ● Where?

- Amount of product purchased
- Purchase date
- Point of purchase, including name and complete address

Is there any left over product held by consumer? Packaging?  
Are there other sources of the same product?

# Step 3: In-plant Assessment – Investigation Example

- Survey of 15 turkey deli plants
- FSIS performed assessments at 4 plants
- CDC joined FSIS for one assessment
- Components of Food Safety Assessment:
  - Regulatory
  - Environmental
  - Microbiological
  - Correlation to human data



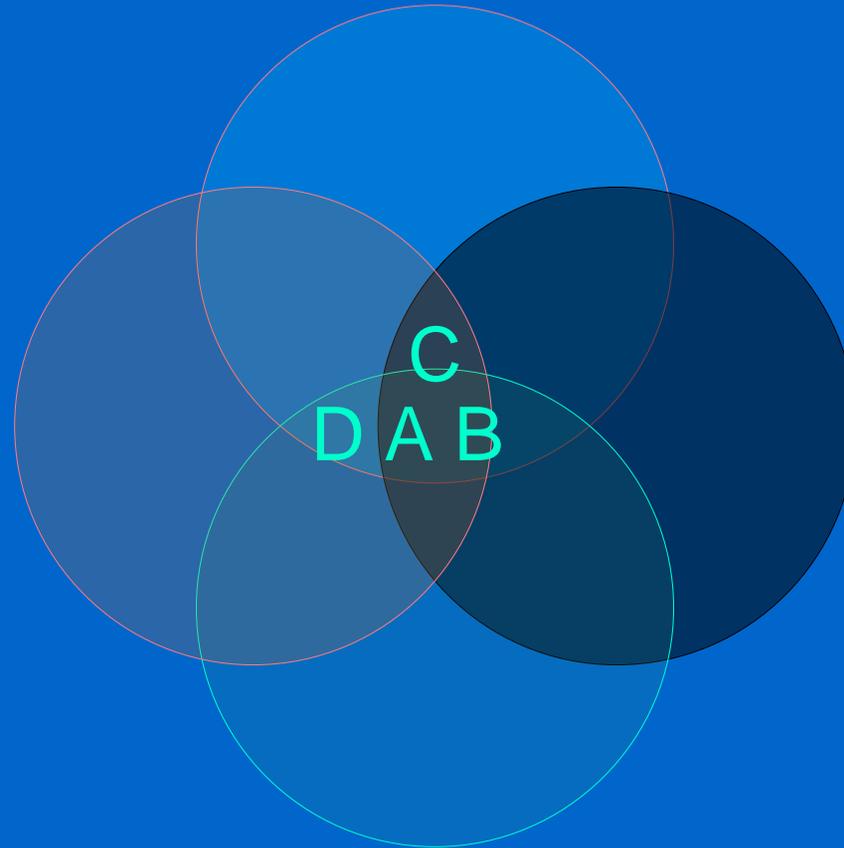
# Step 4: FSIS Analysis of Available Data

- **Is the epidemiologic evidence consistent with:**
  - microbiological data?
  - traceback investigation?
  - environmental evaluation?
  - in-plant findings?

**EPIDEMIOLOGY**

**TRACEBACK**

**MICROBIOLOGY**



**FOOD SAFETY ASSESSMENT**



# Step 5: FSIS Regulated Product Implicated

- **Considerations for Agency action:**
  - the pathogen and severity of illness
  - population at risk
  - whether new cases are being reported
  - strength of the epidemiologic data
  - strength of laboratory data
  - investigation at point of purchase and/or preparation

## Step 6: Agency Action

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- **Plant A recalls over 27 million pounds**
    - Voluntary suspension of operations
  - **Plant B recalls over 4 million pounds**
    - Voluntary suspension of operations



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- **An internal summary documents the investigation, findings, and recommendations**
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- FSIS Lm Directive revised to enhance environmental testing
- Resources increased to accelerate *Listeria monocytogenes* (Lm) risk assessment
- FSIS enhanced employee training for hazard identification
- Public health partner communication



# Conclusion

**Thank you very much!**

**SHOUKRAN Gazellan!**