

# New Tools for Local and State Food Safety Programs

**Kristin C. Delea MPH, REHS**

Division of Emergency and Environmental Health Services  
National Center for Environmental Health

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# What information do you need about Foodborne Illness Outbreaks?

- ❑ Would more information about the characteristics of food establishments involved in foodborne outbreaks be helpful?
- ❑ Could you use science-based information to help inform your inspection prioritization?
- ❑ Would a characterization of your program involvement in investigating foodborne outbreaks be helpful?
- ❑ Would more details than we now have about outbreak food vehicles be helpful?
- ❑ Do you think knowing *why* outbreaks appear to occur would be helpful?

# Overview of Presentation

- ❑ The Problem
- ❑ Background to Address Problem
- ❑ Environmental Assessment
- ❑ Training
- ❑ Surveillance

## The Problem

- ❑ Each year roughly 1 in 6 Americans (or 48 million people) get sick, 128,000 are hospitalized, and 3,000 die from foodborne diseases.\*
- ❑ Acute foodborne illnesses cost the U.S. an estimated \$152 billion each year in healthcare, workplace, and other economic losses.
- ❑ Half of all foodborne illness outbreaks are associated with restaurants/delis.

\*<http://www.cdc.gov/foodborneburden/estimates-overview.html>

## The Problem

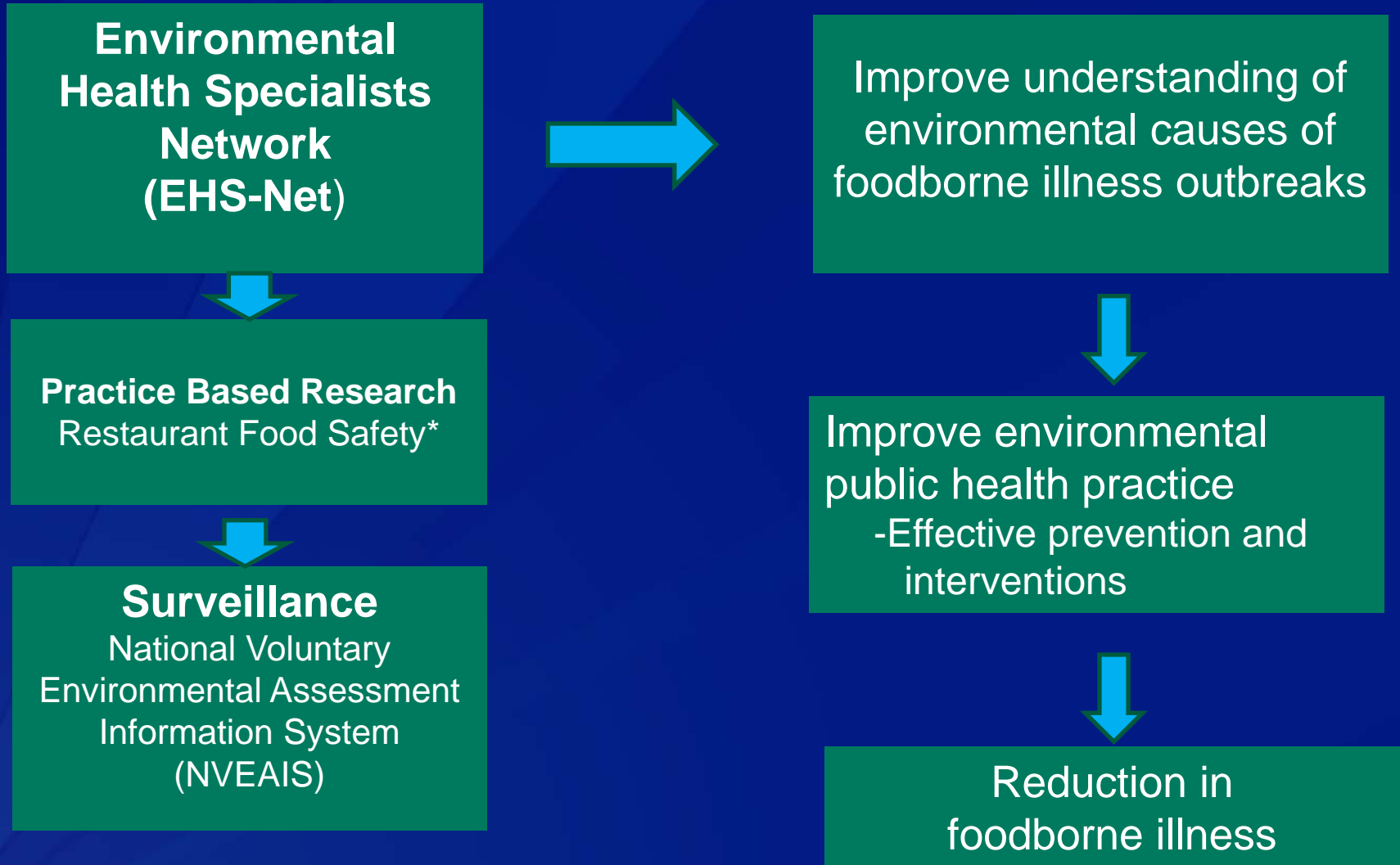
- ❑ Inspectors (environmental health specialists) need training on conducting environmental assessments during foodborne outbreak investigations.\*
- ❑ Limited contributing factor information and no information on environmental antecedents are currently reported to CDC's existing National Outbreak Reporting System (NORS).

• Selman, CA and Green, LR (2001). Environmental health specialists' self-reported foodborne illness outbreak investigation practices. *Journal of Environmental Health*, 20(6),16-21.

Check out more information on our website:  
<http://www.cdc.gov/nceh/ehs/EHSNet/index.htm>

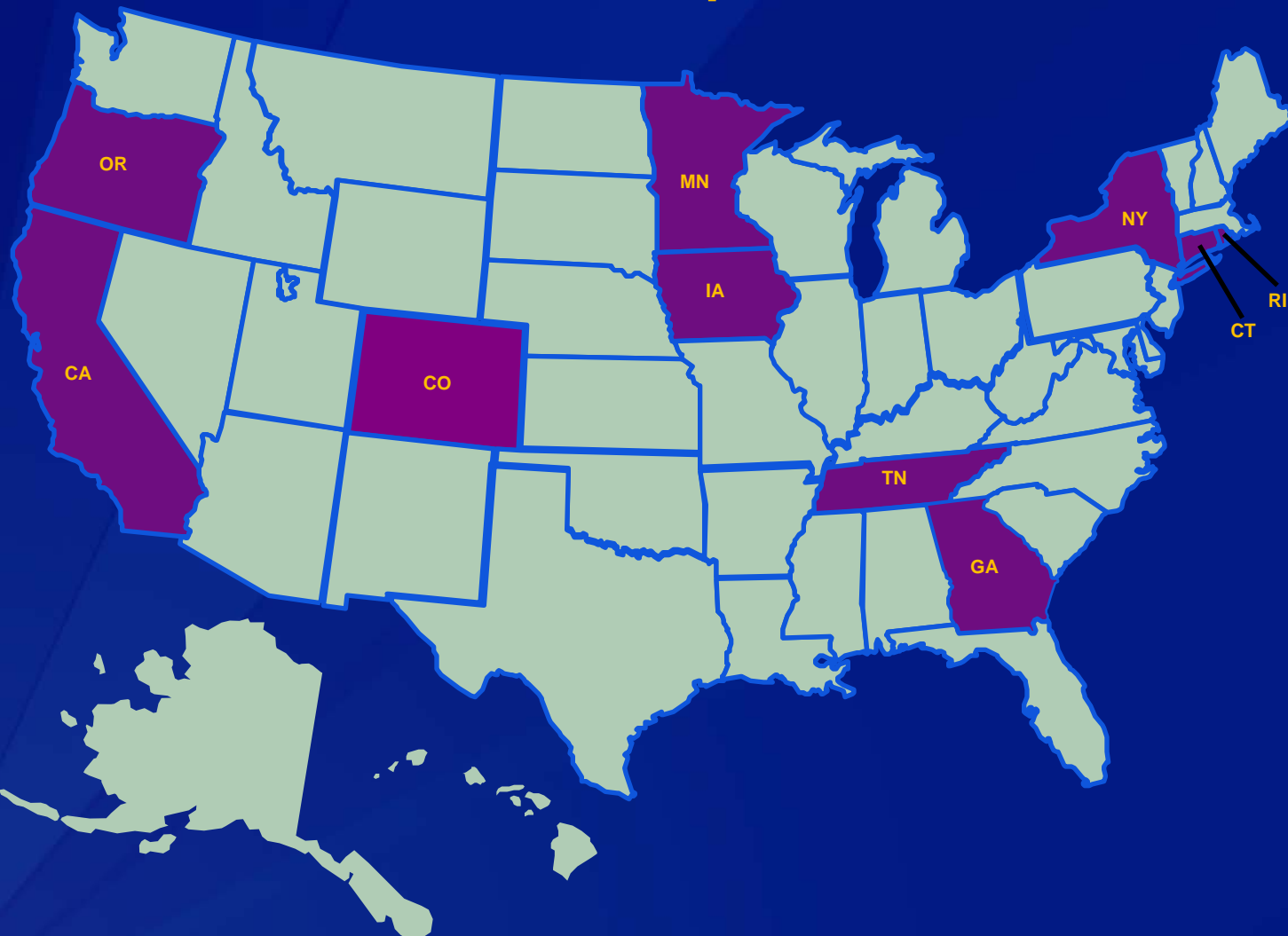
**BACKGROUND**

# Food Safety Work



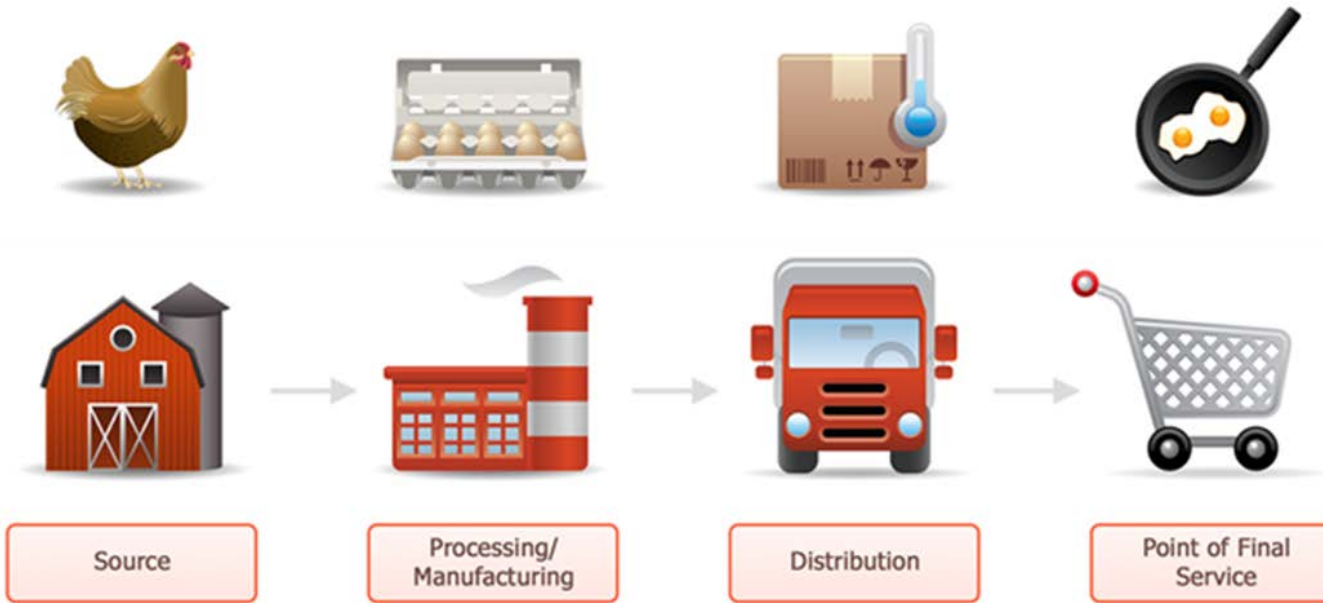
\*<http://www.cdc.gov/nceh/ehs/EHSNet/foodsafety.htm>

# EHS-Net Participants, 2000–2010





## The Farm To Fork Continuum



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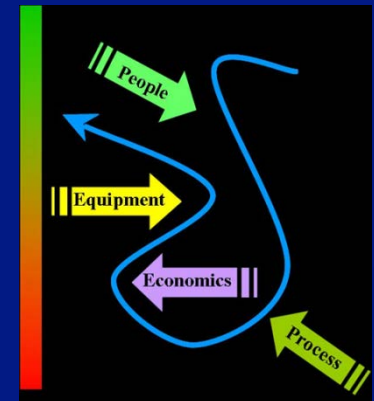
# ENVIRONMENTAL ASSESSMENT

# Environmental Assessments

- ❑ Past – Foodborne Outbreak
  
- ❑ Present – Routine Inspections
  - Information representing current conditions
  - What can be observed or measured at the time of the inspection
  - What violations of regulatory requirements are cited
  
- ❑ Future – Plan Review or Hazard Analysis and Critical Control Points (HACCP) Plan Development
  - Based on expectations in the future
  - Identifies potential food safety problems
  - Identifies potential critical control points and limits for future use

# Foodborne Illness Outbreak Environmental Assessments

- ❑ Describes how the environment contributes to the introduction and or transmission of agents that cause illness
- ❑ Objectives of the assessment
  - Identify contributing factors
  - Identify environmental antecedents
  - Generate recommendations for informed interventions



# Environmental Causes of Foodborne Illness Outbreaks

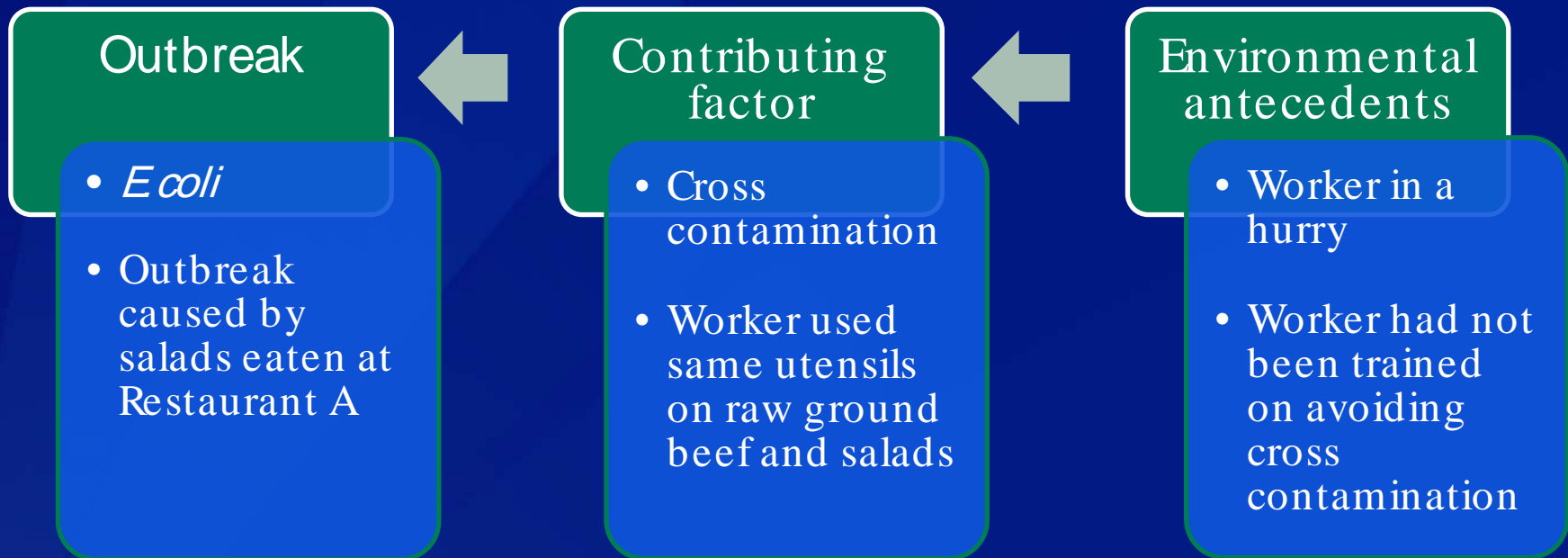
## Contributing factors

- Factors that caused the outbreak
- *How* the outbreak occurred

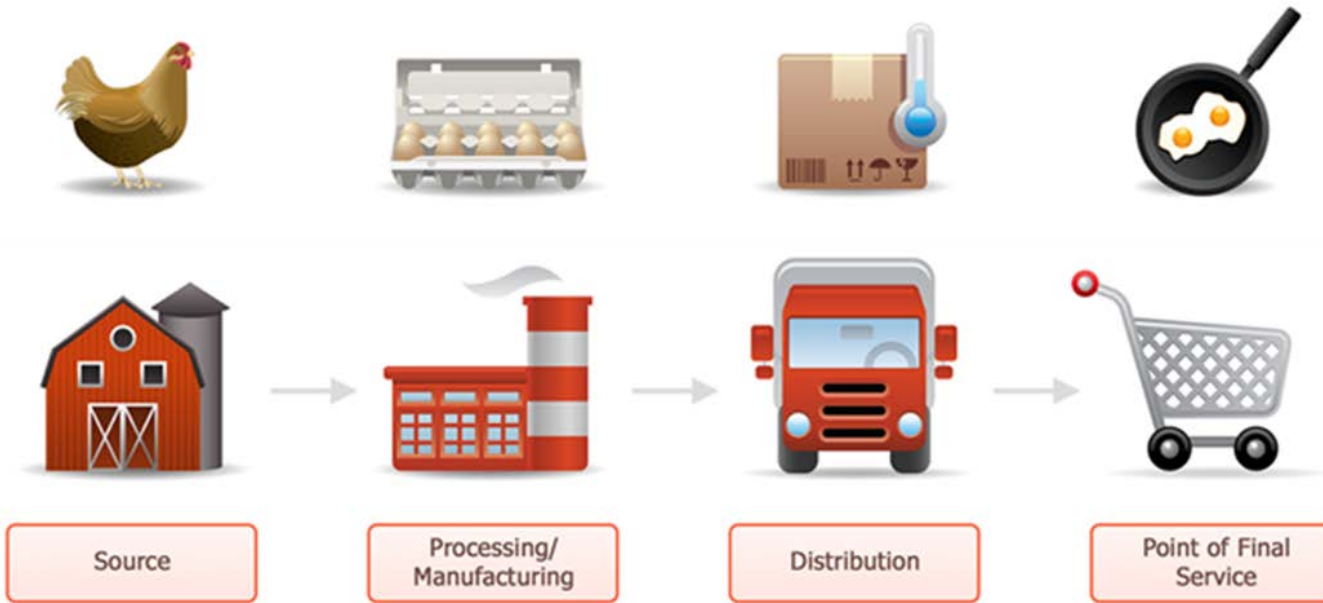
## Environmental antecedents

- Factors that led to the contributing factors
- *Why* the outbreak occurred

# Environmental Causes of Foodborne Illness Outbreaks

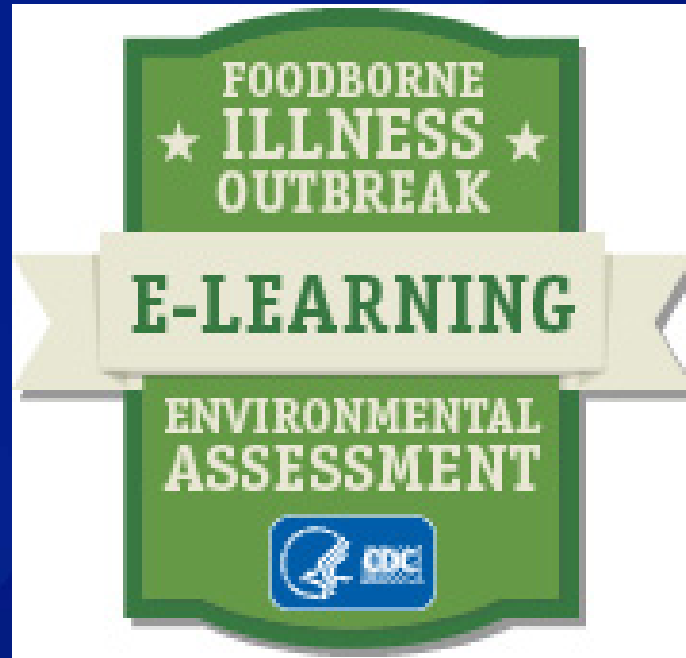


## The Farm To Fork Continuum



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# TRAINING



## e-Learning on Environmental Assessments of Foodborne Illness Outbreaks

[http://www.cdc.gov/nceh/ehs/eLearn/EA\\_FIO/index.htm](http://www.cdc.gov/nceh/ehs/eLearn/EA_FIO/index.htm)

# e-Learning

- ❑ Uses cutting-edge e-learning technologies to develop competency with environmental assessments of foodborne illness outbreaks and deliver free training over the Internet to enhance global food safety

The collage illustrates the e-learning training interface. It features a browser window displaying the CDC website with a navigation menu. A 3D virtual instructor is shown in a green top. A chef in a white uniform is also visible. A refrigerator is shown with a digital display showing 58°F and a task list for 'Left Beef Stew'.

**Question Category**

1. Tasks Performed by this FW
2. Establishment Policies
3. Food Safety Training
4. Personal Health
5. Personal Handwashing/Hygiene
6. Personal Use of Gloves

Thinking back about 5 days ago, what tasks did you perform?

Average question effectiveness: 100%

Score: 4%

5 / 125 points

TIME REMAINING: 9:20

END INTERVIEW

Left Beef Stew

- Take temperature
- Get depth of stew
- Get additional info

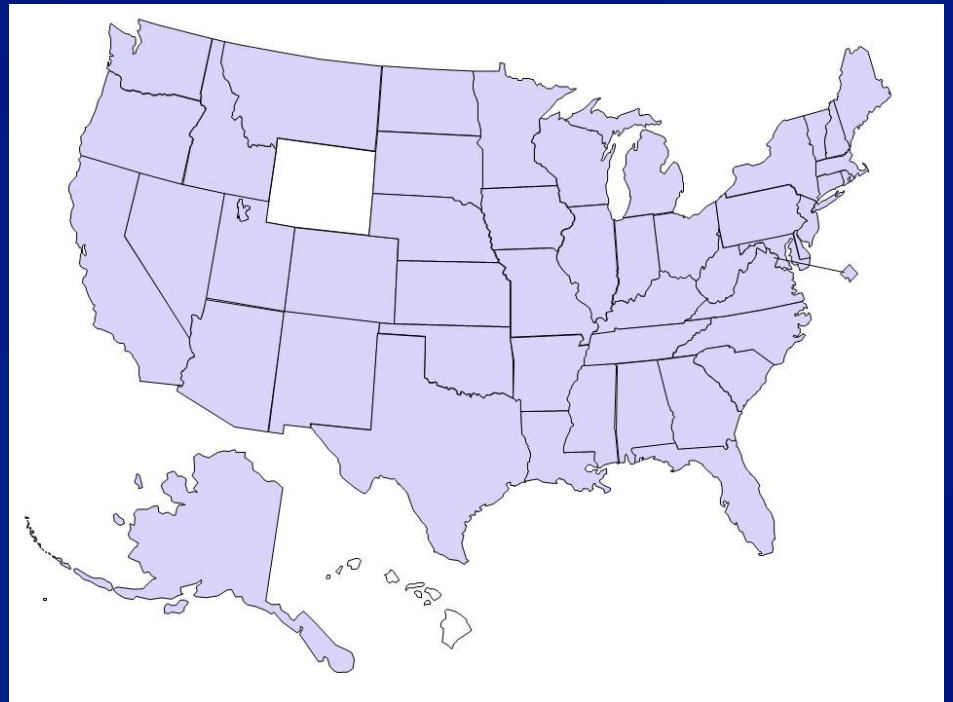
58°F

Since release, >900 users have registered & begun the training.



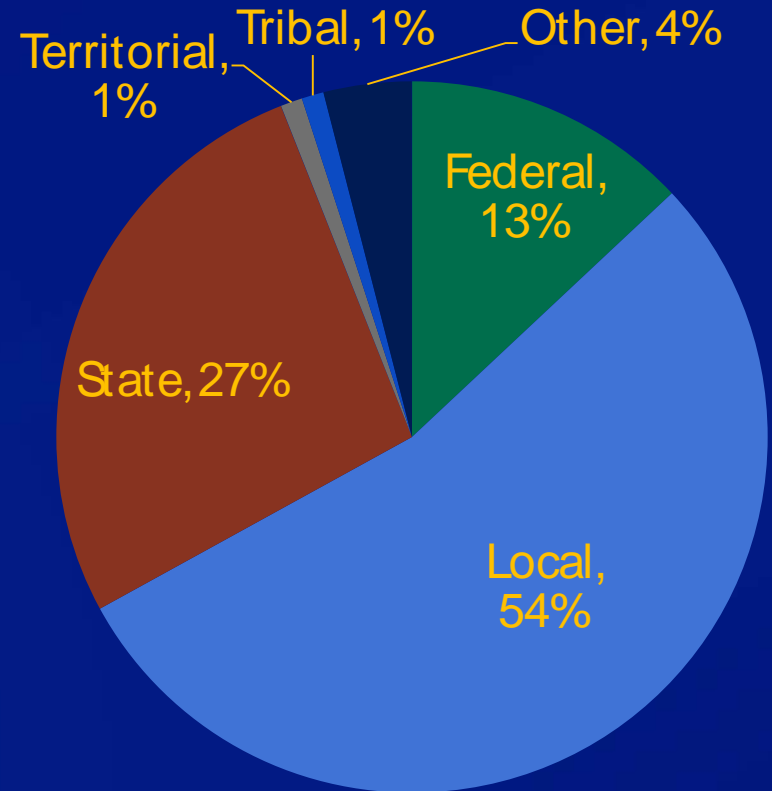
## User Profile: All Users

- ❑ 86% live in the United States.
  - 48 states and the District of Columbia.
- ❑ 14% live in 42 other countries

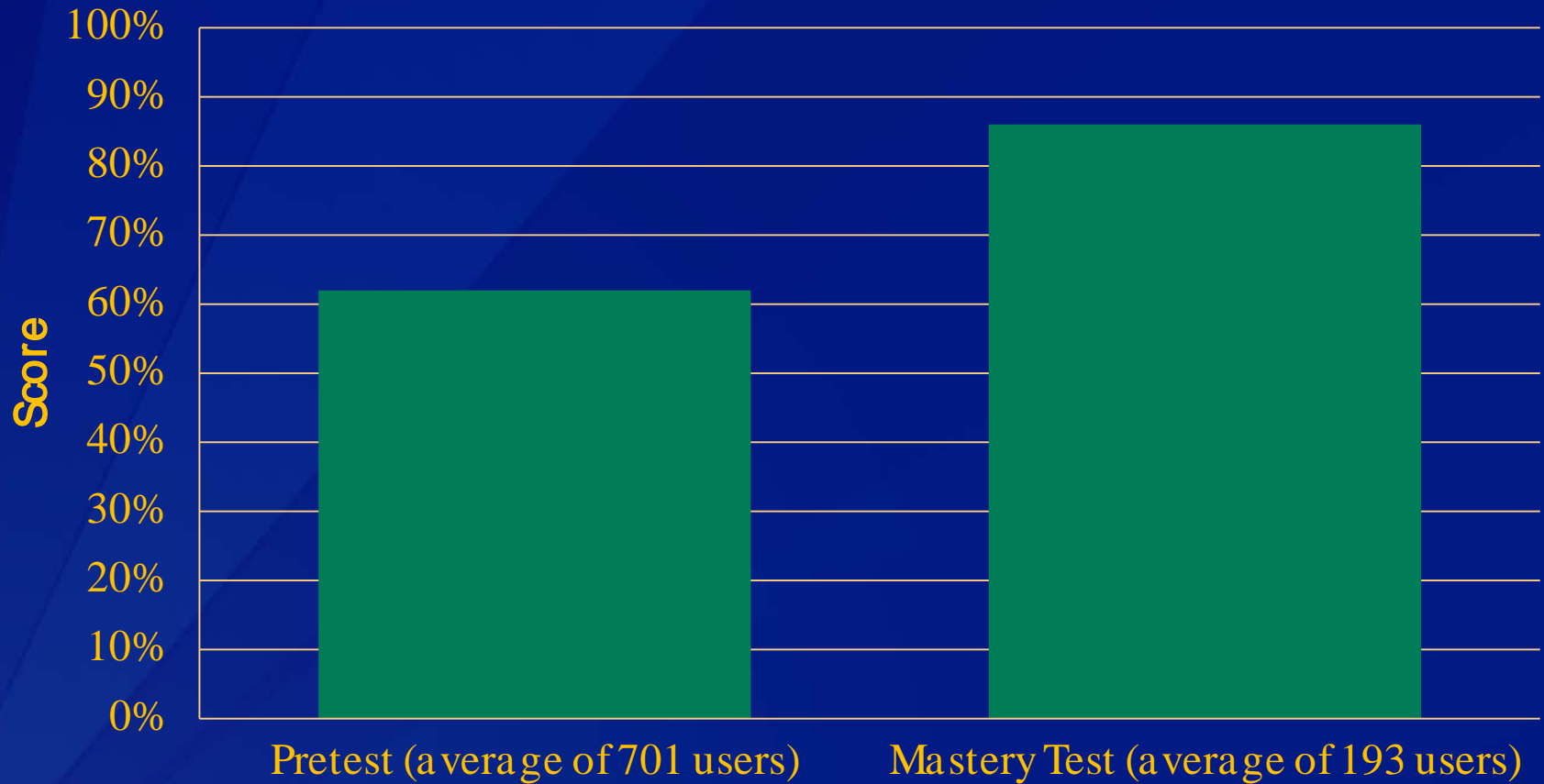


## User Profile: Government

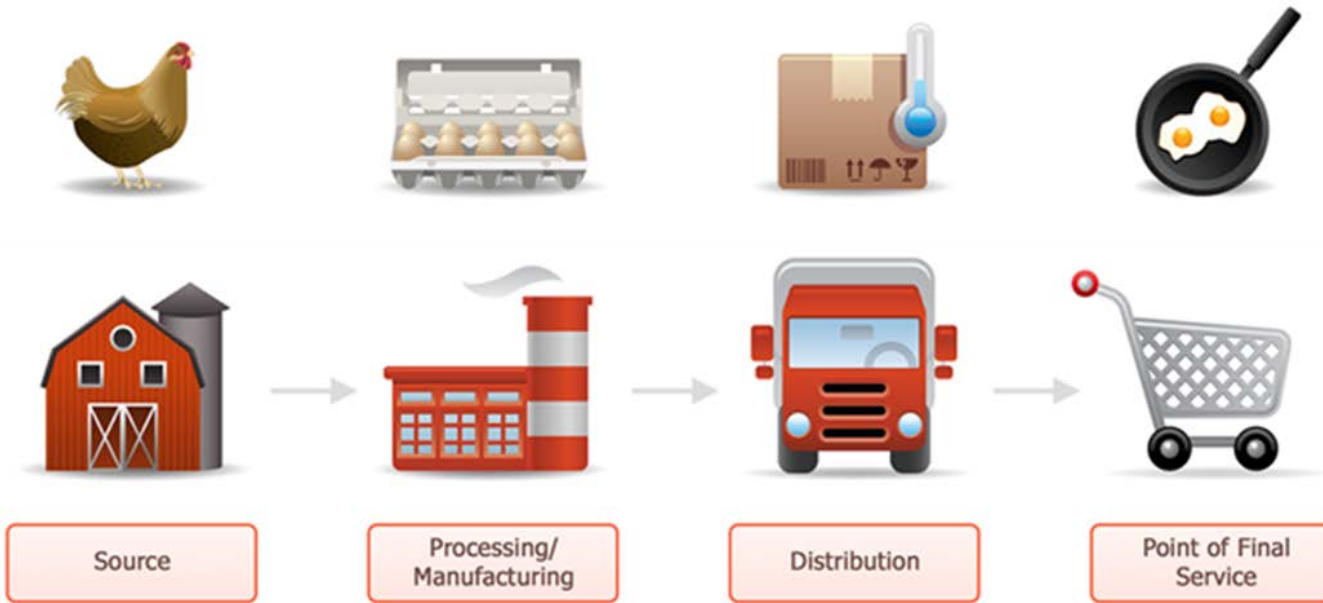
- 58% (721 of 1233 registered users) employed by government agencies
  - United States: 641 users.
  - International: 80 users.



# User Profile: Difference in Pretest and Mastery Test Scores for All Users



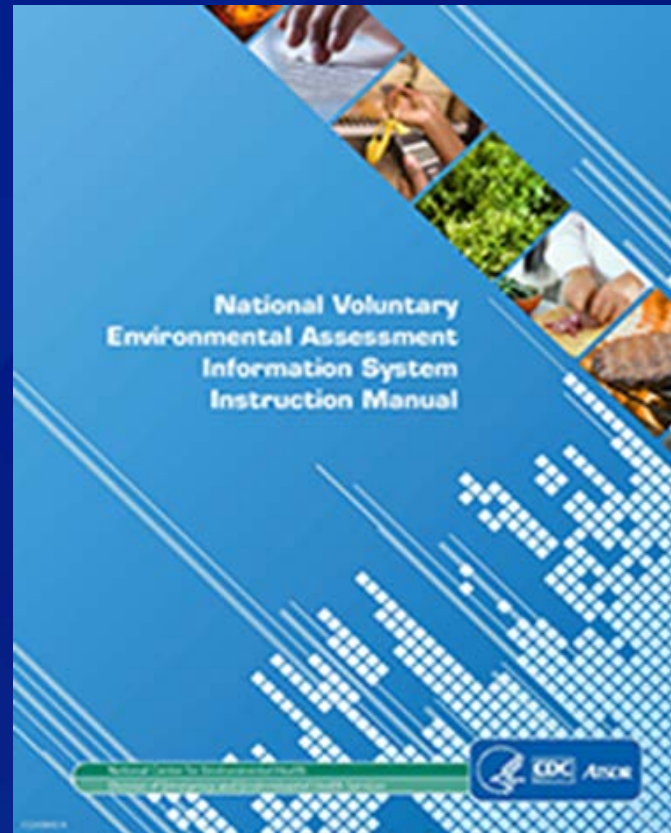
## The Farm To Fork Continuum



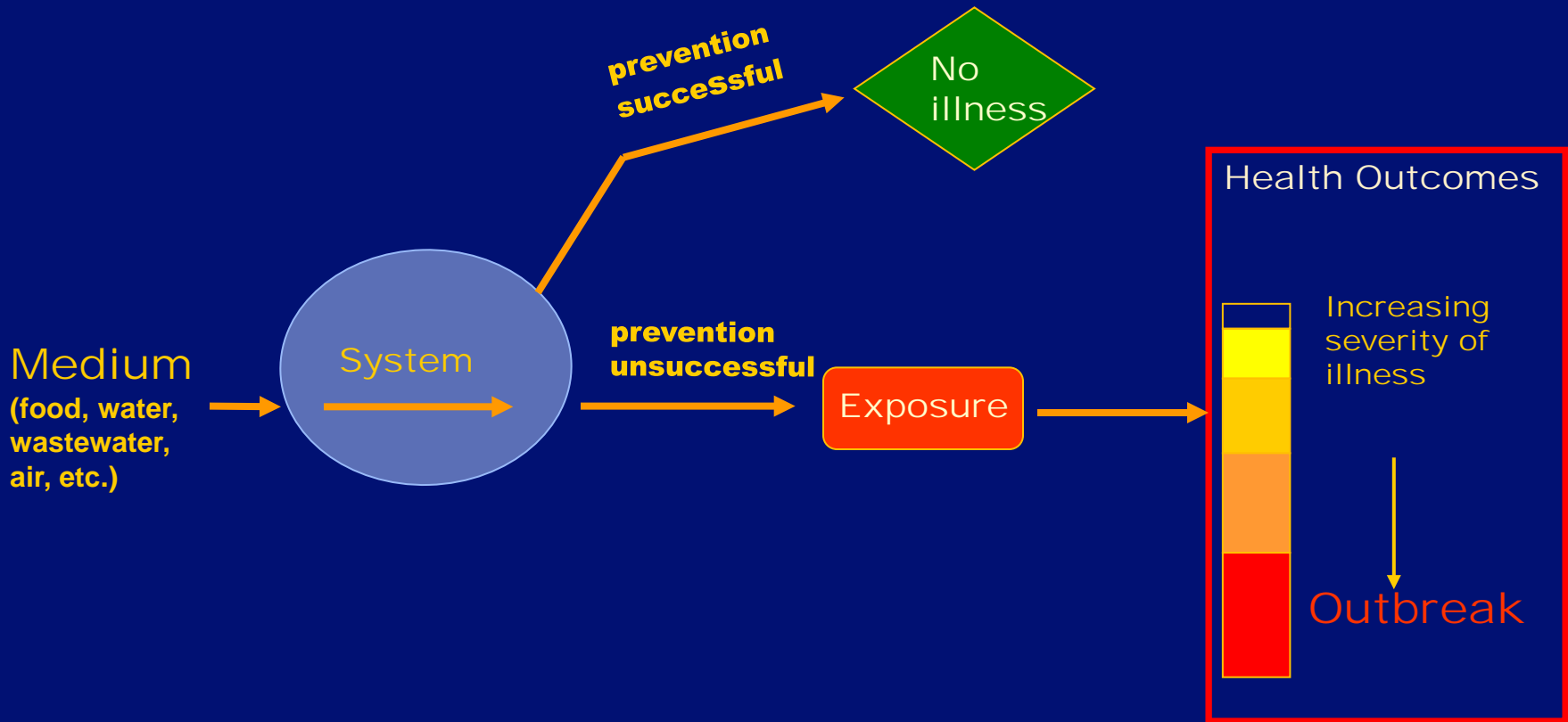
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# SURVEILLANCE

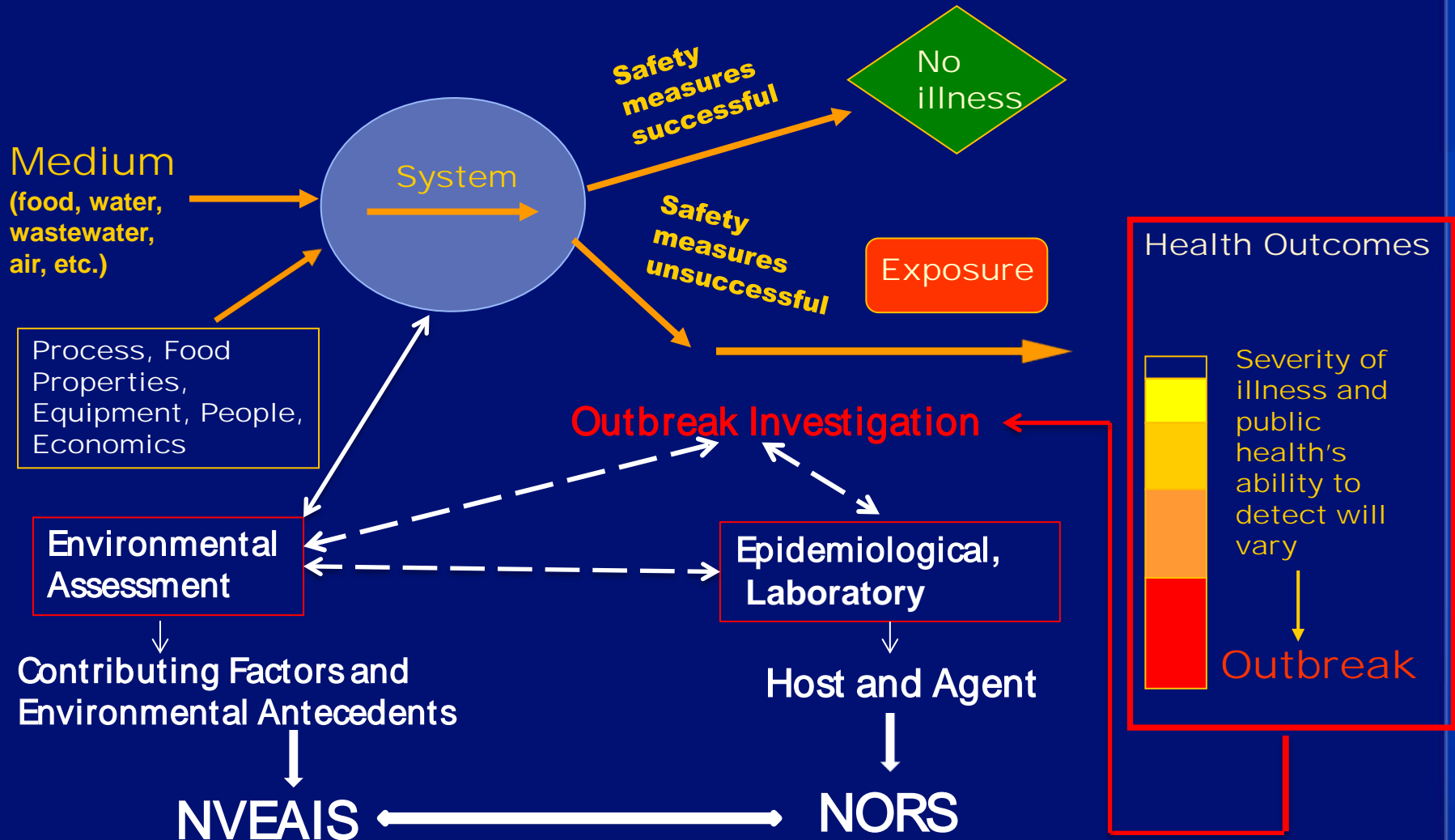
# National Voluntary Environmental Assessment Information System (NVEAIS)



# Using Environmental Assessments to Investigate Disease Outbreaks



# Using Environmental Assessments to Investigate Disease Outbreaks



# NVEAIS

- ❑ Data reported to NVEAIS by local and state food safety programs will be used to
  - Characterize food vehicles and monitor trends.
  - Identify and monitor contributing factors and environmental antecedents.
  - Generate hypotheses.
  - Guide planning, implementation, and evaluation of food safety programs.



# Data Collection Instrument

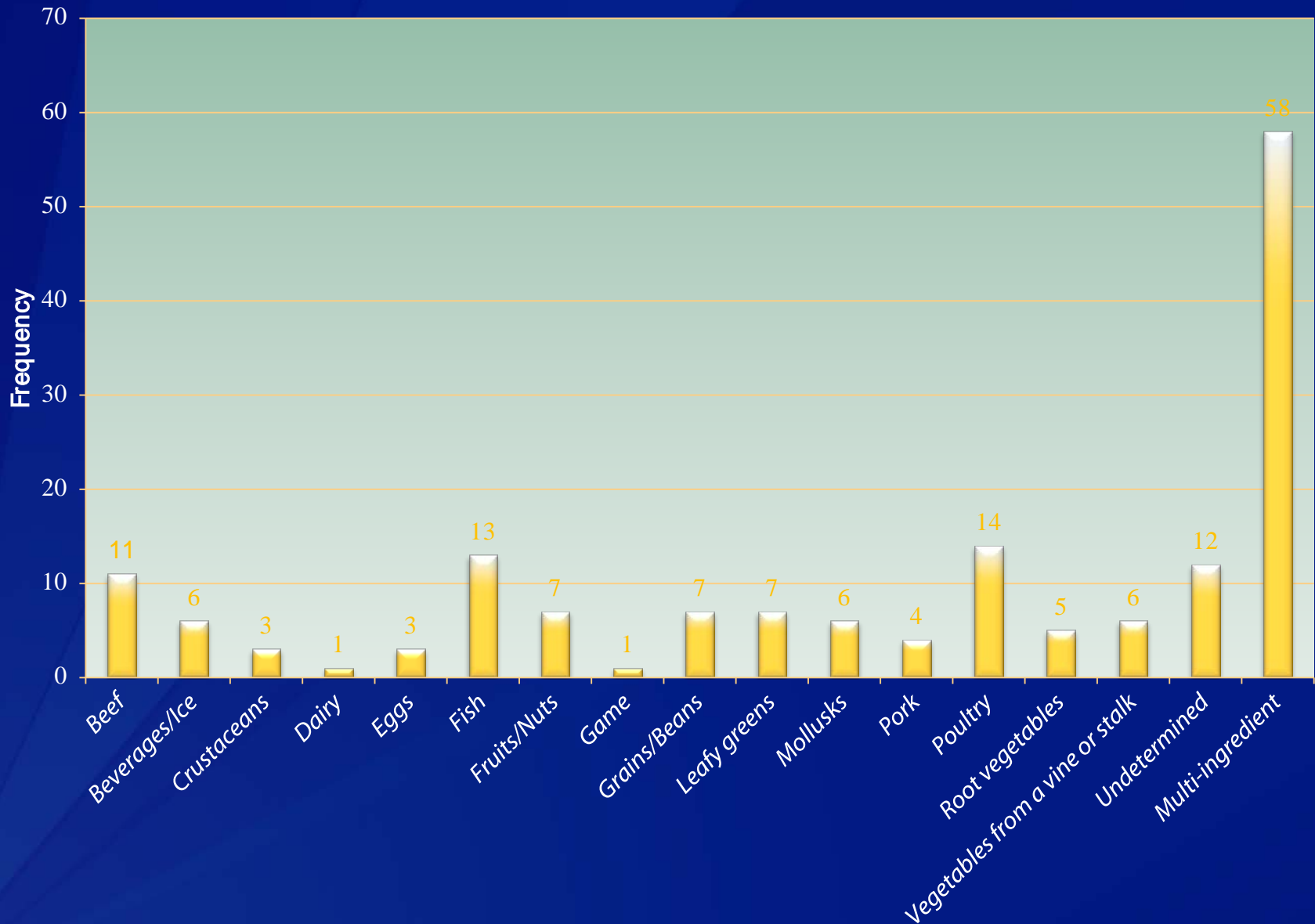
- ❑ Part 1 – General characterization of outbreak
- ❑ Part 2 – Establishment description
- ❑ Part 3 – Manager interview
- ❑ Part 4 – Establishment observation
- ❑ Part 5 – Suspected/confirmed food
- ❑ Part 6 – Sampling
- ❑ Part 7 – Contributing factors

## Preliminary Results, 2009-2013 EHS-Net Pilot\*

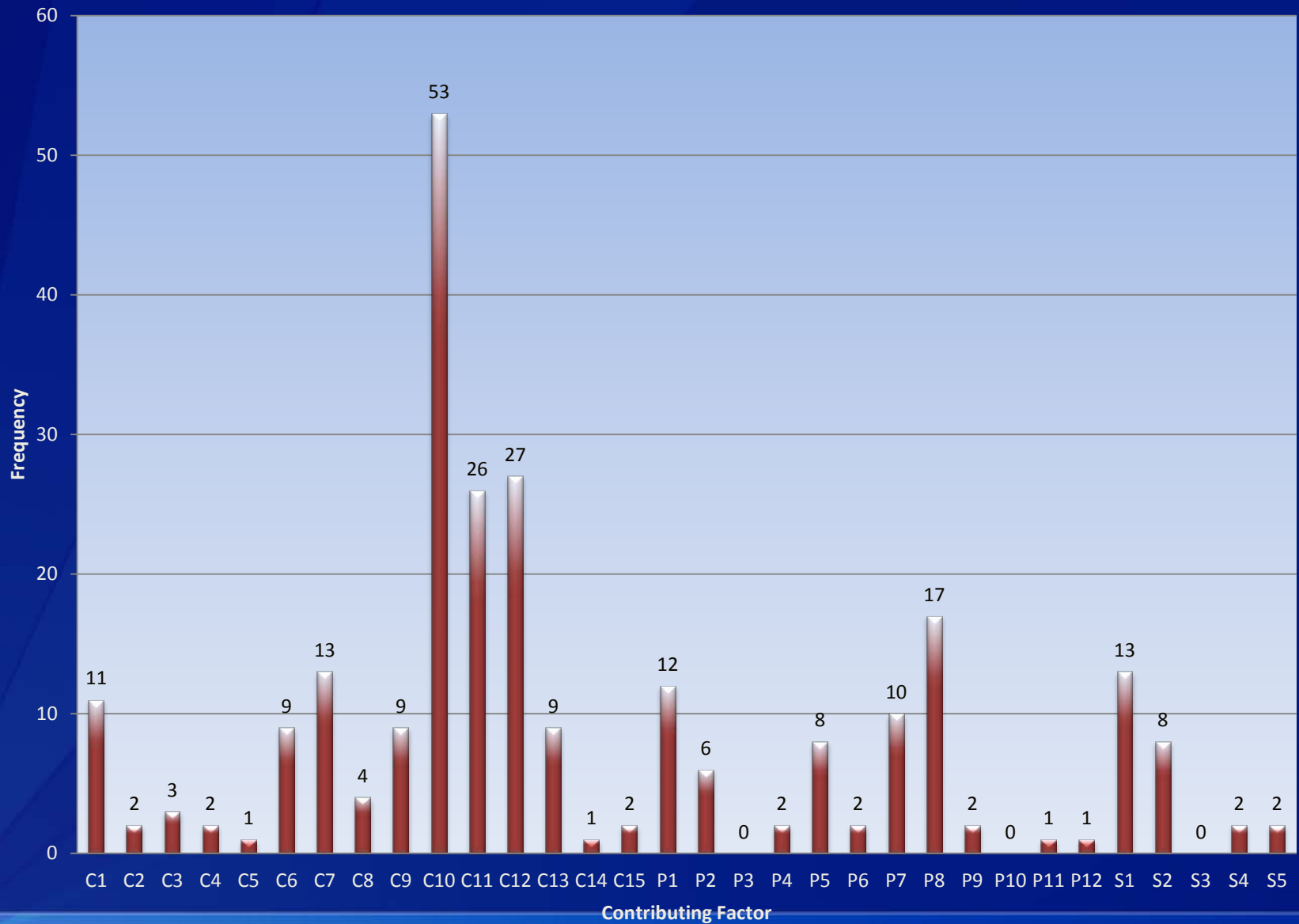
- ❑ 320 outbreaks were reported
- ❑ Averaged 64 outbreaks reported each year
- ❑ 84% of outbreaks involved restaurants
  - Other locations included a caterer, bakery and monastery
- ❑ Contributing factors reported in 70% of outbreaks

\*All data in this and the remainder of presentation represents examples of the type of information NVEAIS can provide

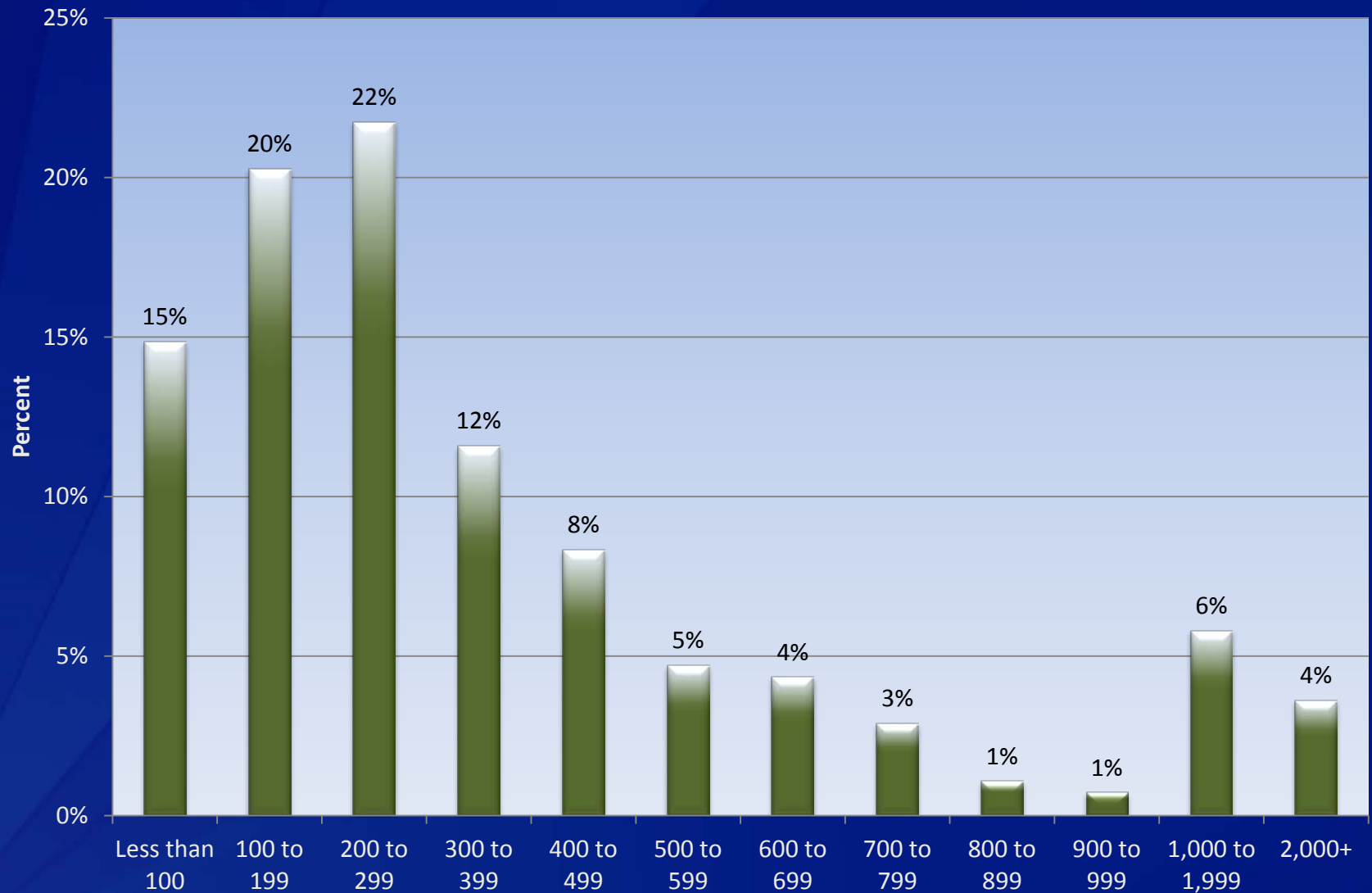
# Identified Food Vehicle of Outbreak



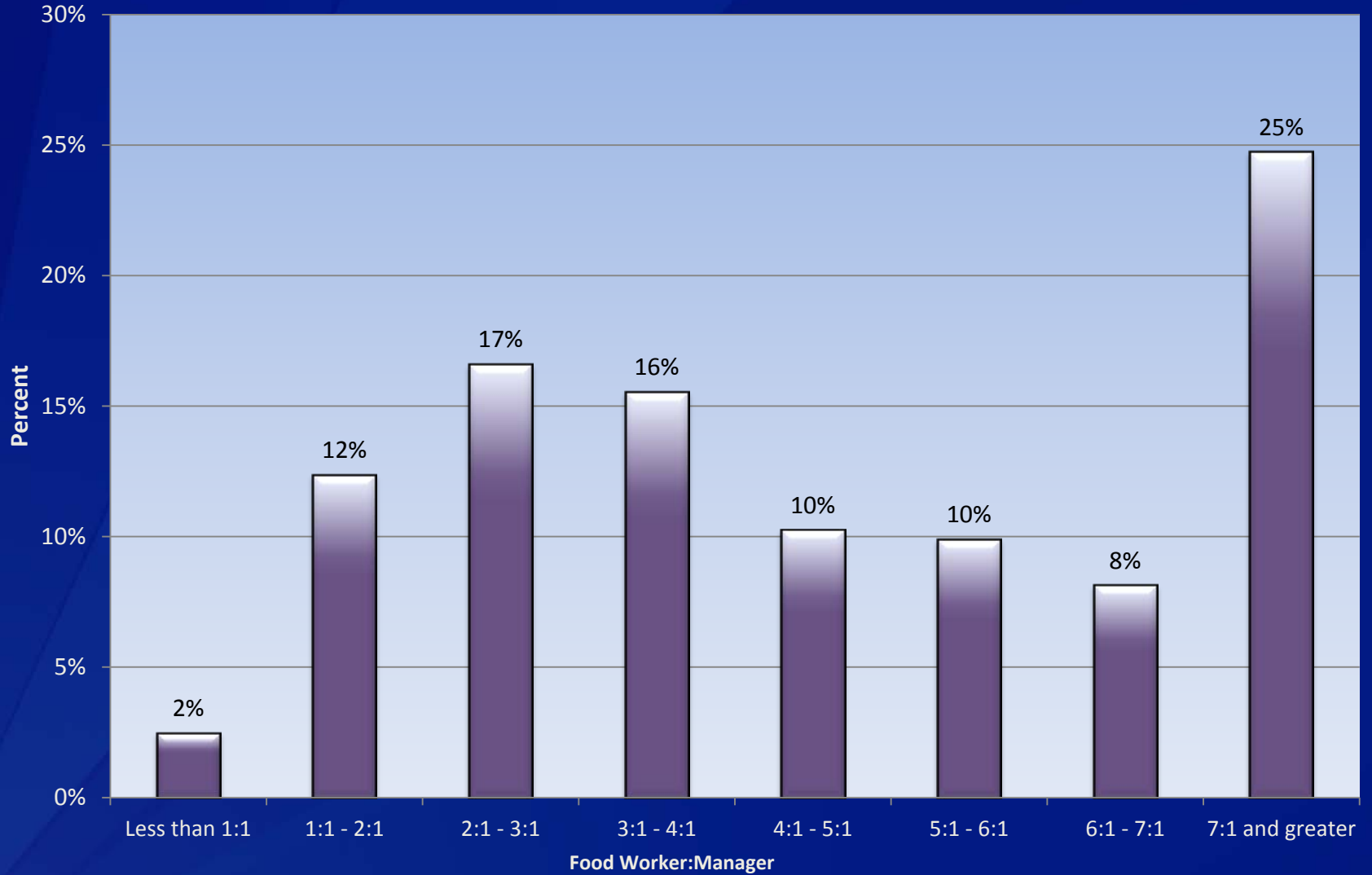
# Outbreak Contributing Factors



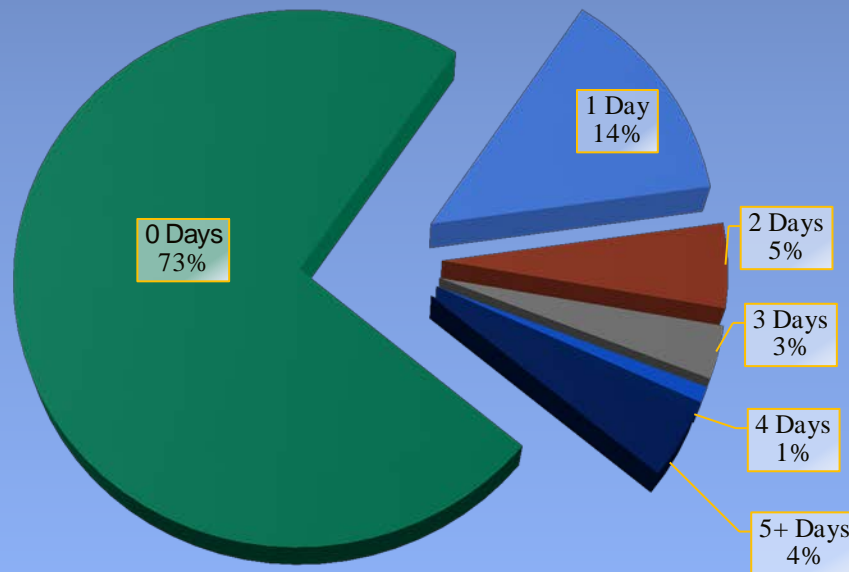
# Number of Meals Served Daily



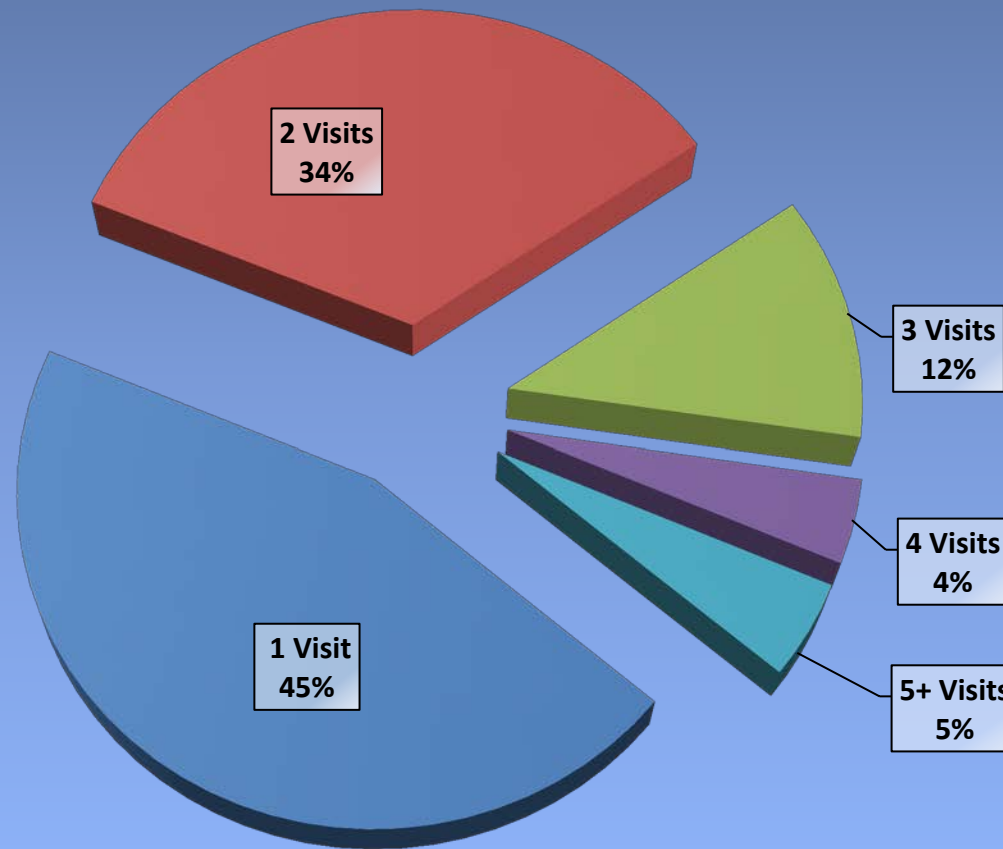
# Ratio of Food Workers to Manager



# Number of Days Between the Date the Establishment Was Identified for an Environmental Assessment and the Day of First Contact with Establishment Management

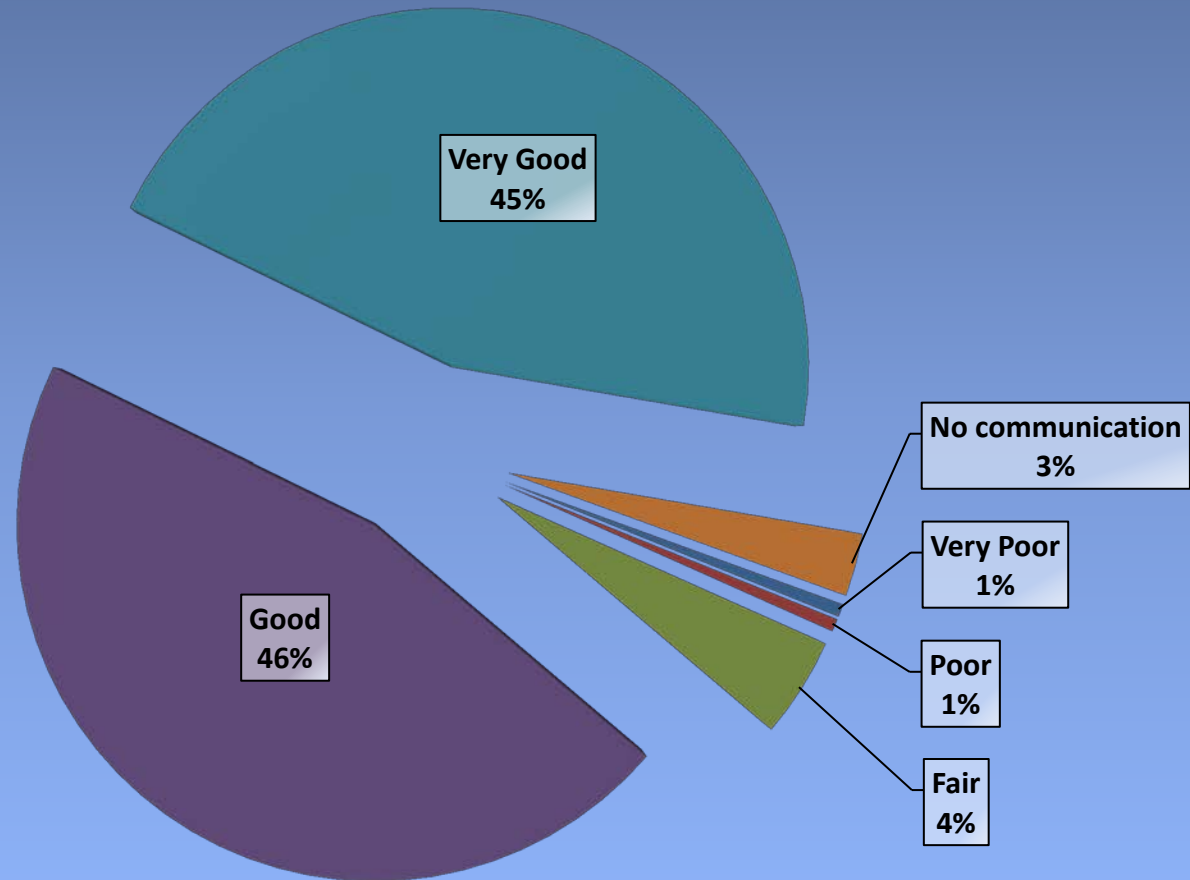


# Number of Visits to the Establishment to Complete the Environmental Assessment





# Quality of Communication



## Currently Registered

- ❑ California Department of Health
- ❑ Connecticut Department of Health
- ❑ Davis County Health Department (Utah)
- ❑ Minnesota Department of Health
- ❑ New York City Department of Health and Mental Hygiene
- ❑ New York State Health Department
- ❑ North Carolina Department of Health and Human Services
- ❑ Tennessee Department of Health
- ❑ Wisconsin Department of Health

## NVEAIS Registration

- ❑ Please consider participating in NVEAIS.
- ❑ NVEAIS was specifically designed to answer a variety of environmental questions important to food safety programs and the prevention of foodborne illness and outbreaks.

Register at

<http://www.cdc.gov/nceh/ehs/NVEAIS/participation.htm>

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# Thank you

**For more information please contact Centers for Disease Control and Prevention**

1600 Clifton Road NE, Atlanta, GA 30333

Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348

E-mail: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov) Web: [www.cdc.gov](http://www.cdc.gov)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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