

# CIFOR Guidelines and Toolkit Implementation Webinar for Decision Makers

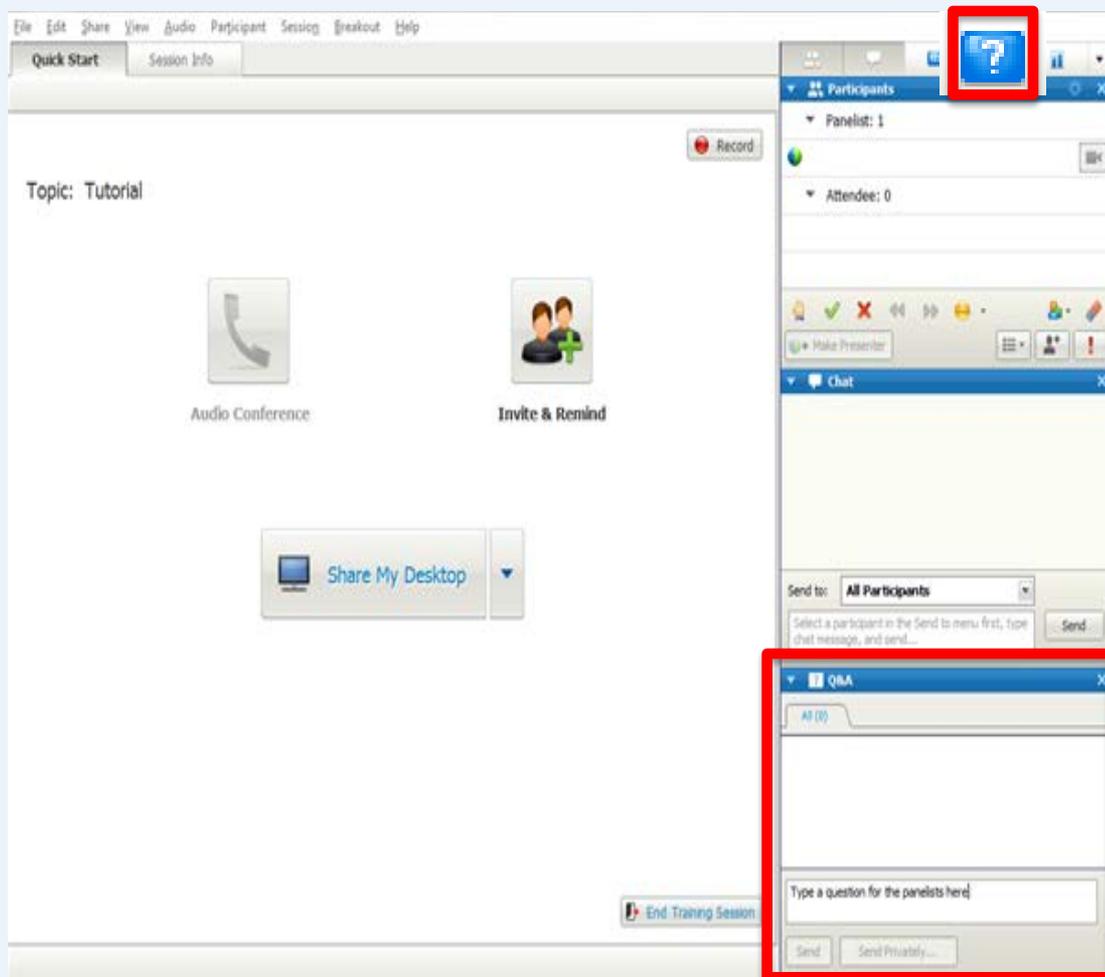
**September 24, 2015**  
**3:00 – 4:00 pm Eastern**

# Webinar Housekeeping

- Please note that today's webinar is being **recorded**
  - The presentation slides and a recording of the webinar will be available on the CIFOR website ([www.cifor.us](http://www.cifor.us))
- All phone lines have been placed on **mute**
- There will be a question-and-answer period at the end of the webinar
  - To ask a question, please use the **Q&A box** on the **right side of your screen**

# To Ask a Question

- Click on the blue question mark tab on the top right panel of your screen
- This will open the Q&A box on the bottom right panel on your screen
- Type a question
- Send it to **All Panelists**
- Questions will be answered during the Q&A period



# CIFOR Guidelines and Toolkit: Moving from Recommendations to Implementation

**Jeanette Stehr-Green, MD**  
Moderator



# Session Objectives

1. Describe the burden of foodborne diseases in the United States.
2. Describe the nature of the CIFOR *Guidelines*.
3. Explain why the CIFOR Toolkit was developed and outline the process.
4. Know how to apply for CIFOR *Guidelines* and Toolkit Implementation Training Grants.
5. List examples of resources available through the Food Safety Centers of Excellence.

# Speakers



**Elaine Scallan, PhD**



**Tim Jones, MD**



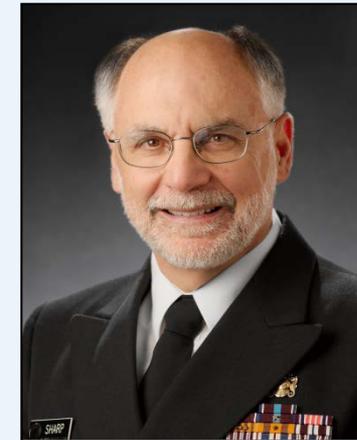
**Joe Russell, RS, MPH**



**Scott Holmes, REHS, MS**



**Dhara Shah, MPH**



**Don Sharp, MD, DTM&H**

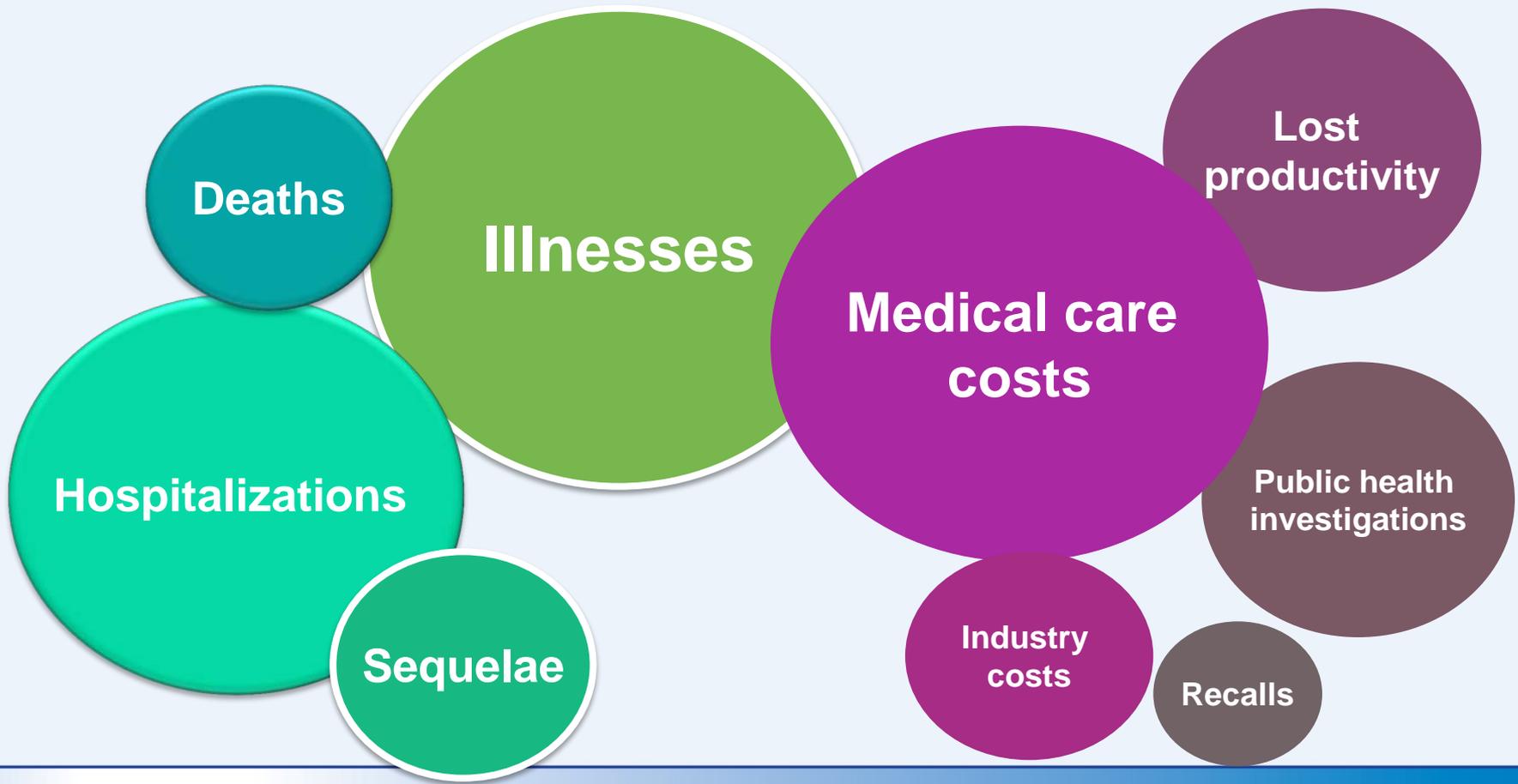
# IMPACT OF FOODBORNE DISEASES IN THE U.S.

**Elaine Scallan, PhD**  
Colorado School of Public Health

# What is the impact?

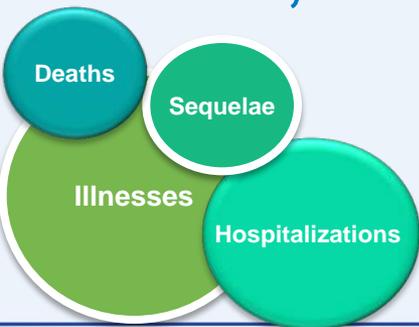
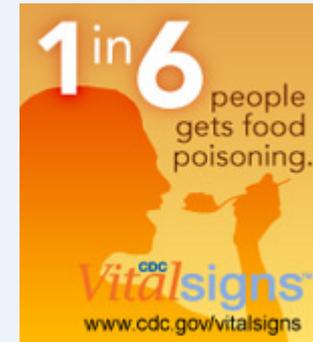
Human health impact

Economic cost



# Human health impact

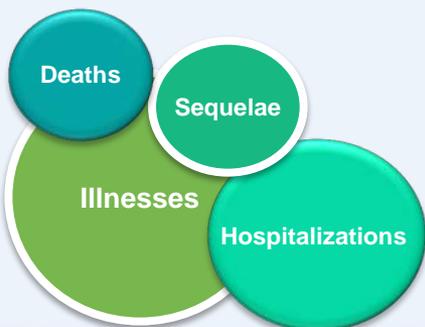
- CDC estimated that each year roughly **1 in 6 Americans** get sick from foodborne diseases\*
  - 48 million become ill
  - 128,000 are hospitalized
  - 3,000 die



\*Scallan E et al. *Emerg Infect Dis.* 2011;17(1): 7-22

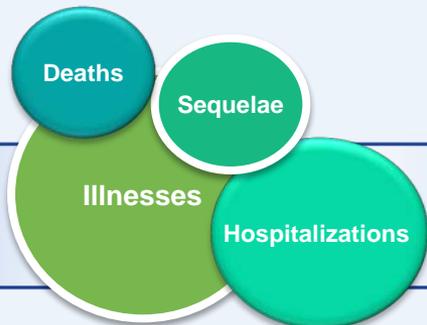
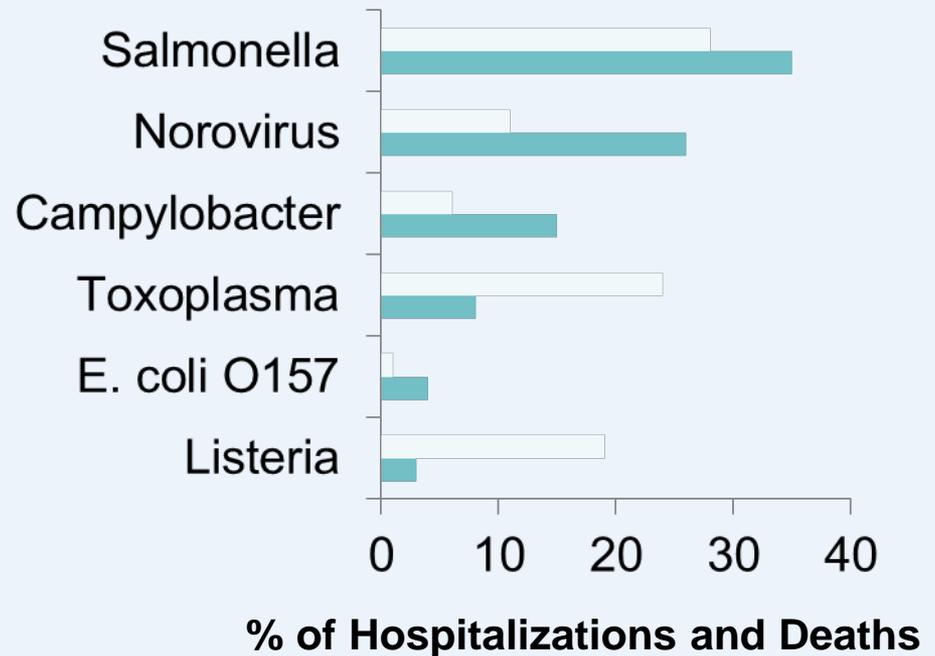
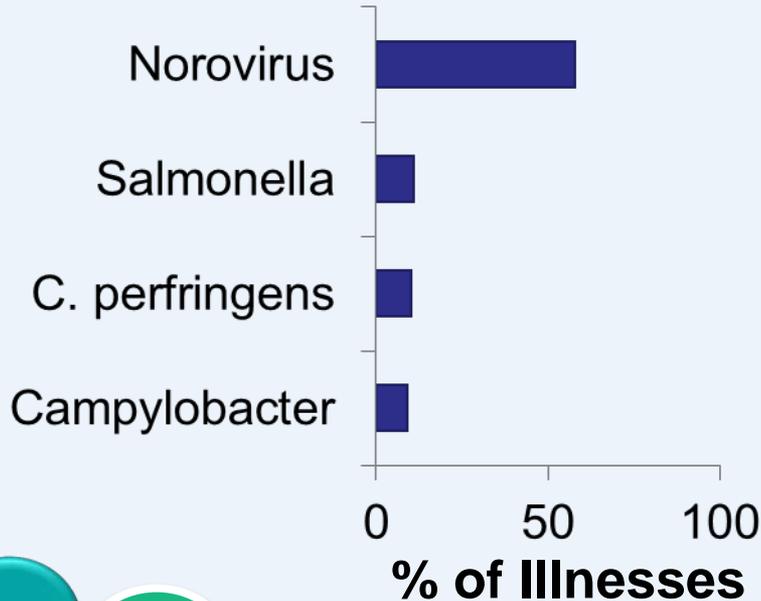
# Annual estimate of domestically acquired foodborne illness: Illnesses, hospitalizations, and deaths

	31 known pathogens
Illnesses (millions)	9.4
Hospitalizations	55,961
Deaths	1,351



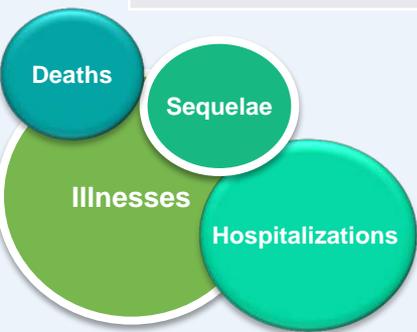
# Major pathogens causing illness, hospitalization, and death

- *Salmonella*, norovirus, *Campylobacter*, *Toxoplasma*, *E. coli* O157, *Listeria*, & *C. perfringens*
  - 7 pathogens cause 90% of illnesses, hospitalizations, and deaths



# Annual estimate of domestically acquired foodborne illness: Illnesses, hospitalizations, and deaths

	31 known pathogens	Unspecified Agents
Illnesses (millions)	9.4	38.4
Hospitalizations	55,961	71,878
Deaths	1,351	1,686



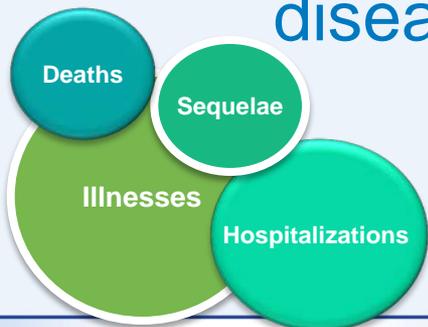
- *Unspecified agents comprise 80% of illnesses and 56% of hospitalizations and deaths*

# Foodborne disease sequelae

- Foodborne infections can result in long-term complications and sequelae, including:
  - Guillain-Barré syndrome
  - Post-infectious irritable bowel syndrome
  - Reactive arthritis
  - Neurological disorders
  - Central nervous system abnormalities
  - Ocular toxoplasmosis
  - Hemolytic uremic syndrome

# Foodborne disease sequelae

- *Example:* Hemolytic uremic syndrome
  - Life-threatening kidney failure
  - Most cases develop in children after 2-14 days of diarrhea due *E. coli* O157
- 6% of people with *E. coli* O157 developed HUS\*
  - 3% of HUS patient develop End-stage renal disease\*\*

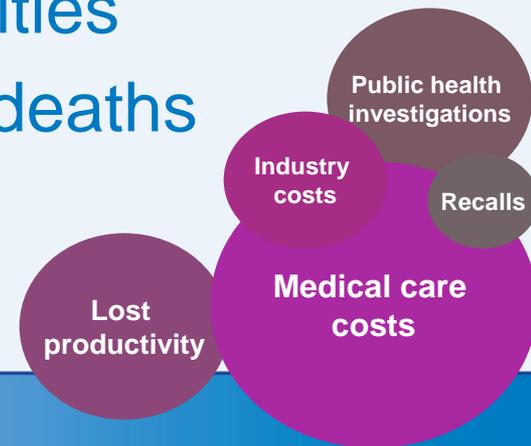


\*Gould et al. *Clin Infect Dis.* 2009 Nov 15;49(10):1480-5

\*\*Garg et al. *JAMA*, 2003. 290(10): 1360-1370.

# Economic cost

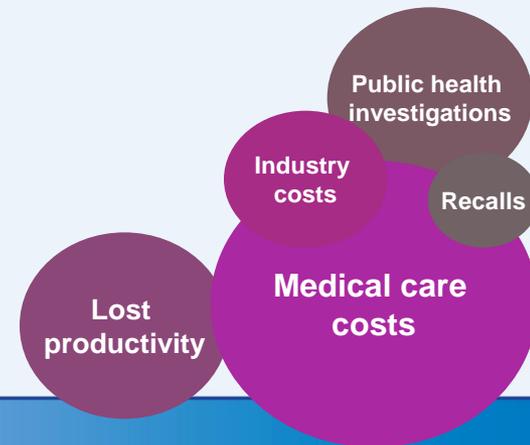
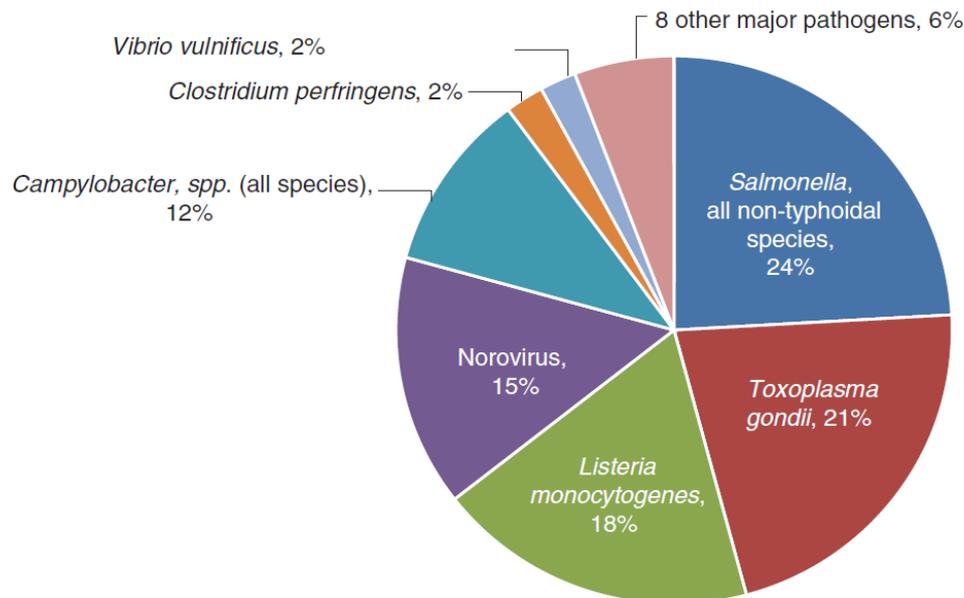
- USDA estimated \$15.5 billion in economic burden annually caused by 15 leading foodborne pathogens in the U.S.\*
  - Medical treatment costs
  - Hospitalization costs
  - Productivity loss
  - Cost of chronic illnesses and disabilities
  - Willingness to pay to reduce risk of deaths



\*Hoffmann et al. ERS. Cost Estimates of Foodborne Illnesses. 2015

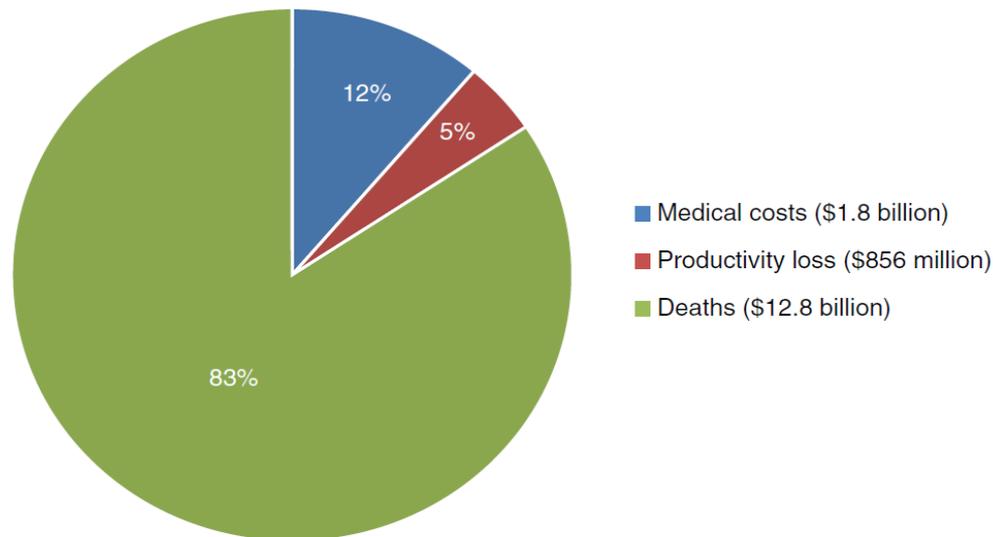
# Major pathogens contributing to the economic cost

- *Salmonella*, *Toxoplasma*, *Listeria*, *Campylobacter*, and norovirus
  - 5 pathogens caused >90% of total economic burden



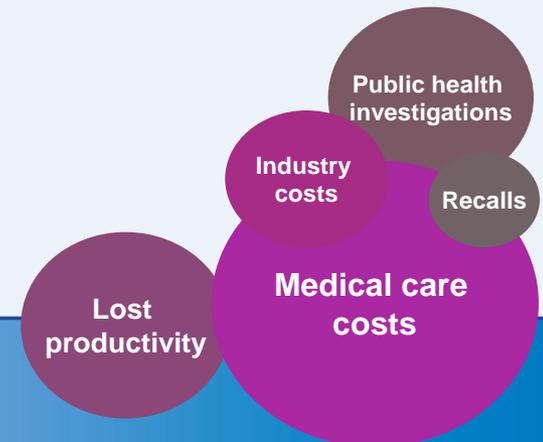
# Cost of foodborne illness

- Varies widely, ranging from \$202 per case of *Cyclospora* to \$3.3 million for *Vibrio vulnificus*
- 84% of the economic burden from these 15 pathogens is due to deaths



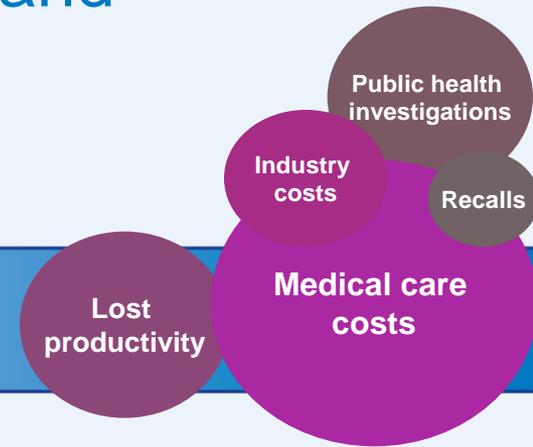
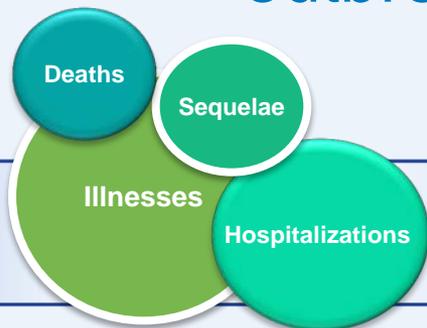
# Additional costs

- Government agency costs
  - Costs of public health investigations
  - Food safety regulation and enforcement
- Industry costs
  - Notifying consumers
  - Removing food from shelves
  - Paying damages etc.
- *And much more...*



# The bottom line

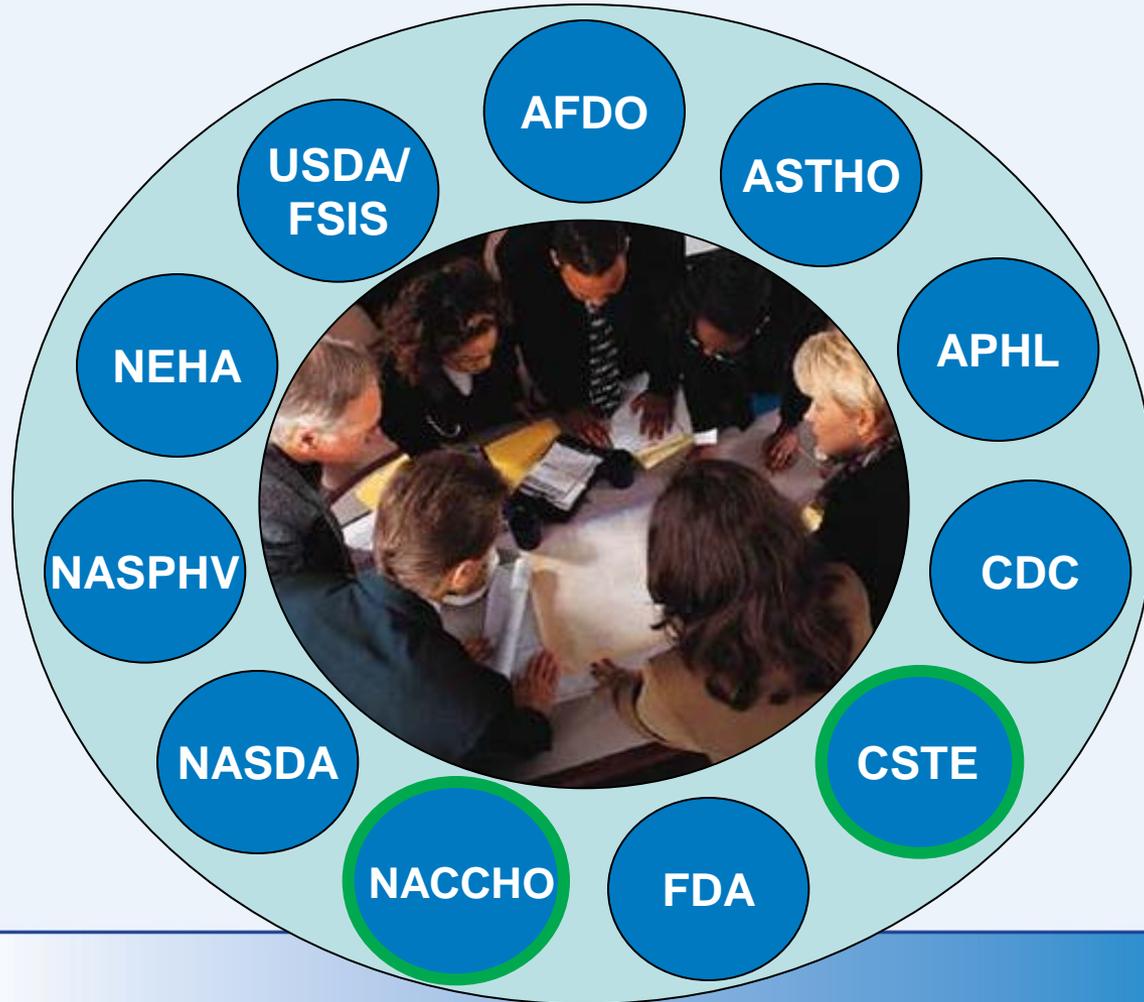
- High impact of foodborne disease
  - Average 1 in 6 people ill each year
  - High costs of at least \$15.5 billion
- The good news:
  - A lot that can be done to prevent foodborne illness and improve public health
  - Begins with improving the detection and investigation of foodborne diseases and outbreaks



# CIFOR and CIFOR *Guidelines*

**Tim Jones, MD**  
Tennessee Department of Health

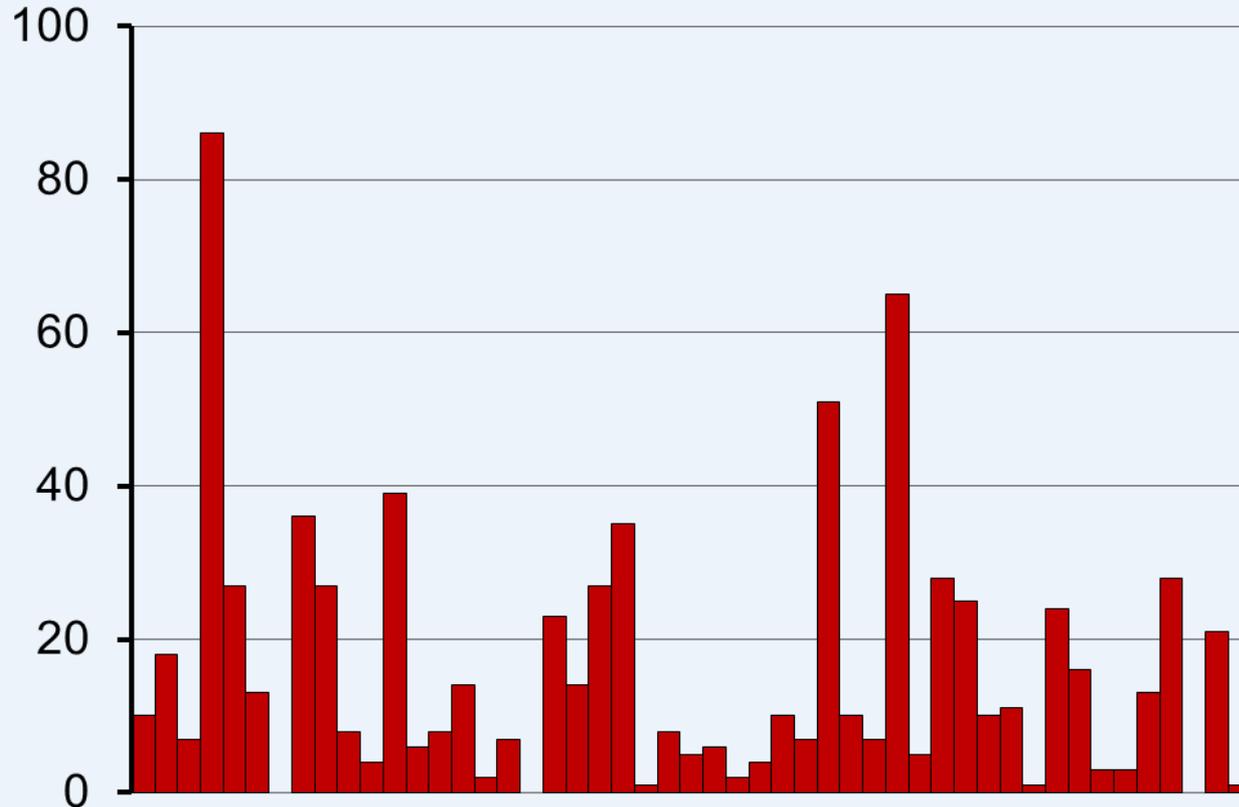
# Council to Improve Foodborne Outbreak Response (CIFOR)



# About CIFOR

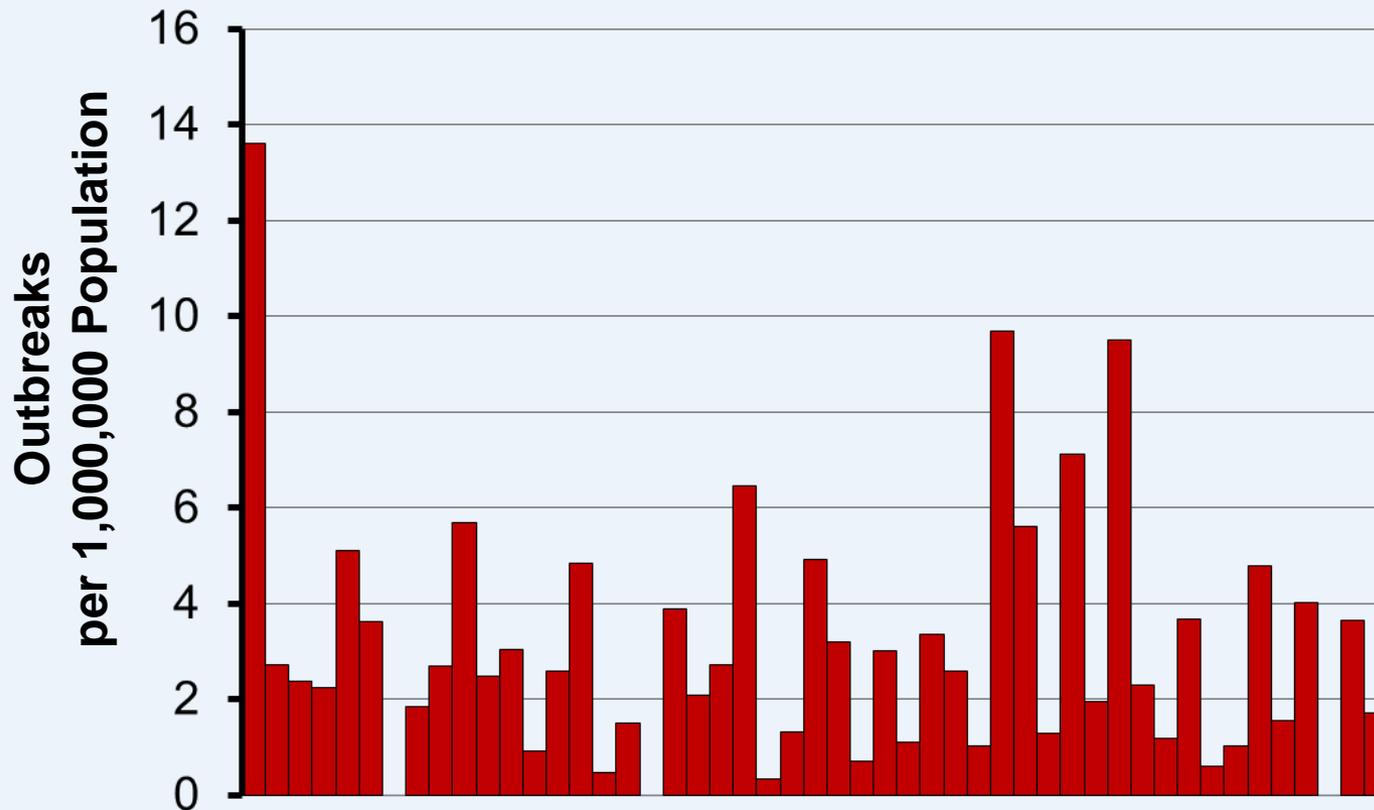
- **Vision**: Local, state, and federal partners collaborating effectively to reduce the burden of foodborne illness in the U.S.
- **Mission**: To improve methods at the local, state, and federal levels to detect, investigate, control, and prevent foodborne disease outbreaks

# Number of Foodborne Disease Outbreaks\* by State, United States, 2013



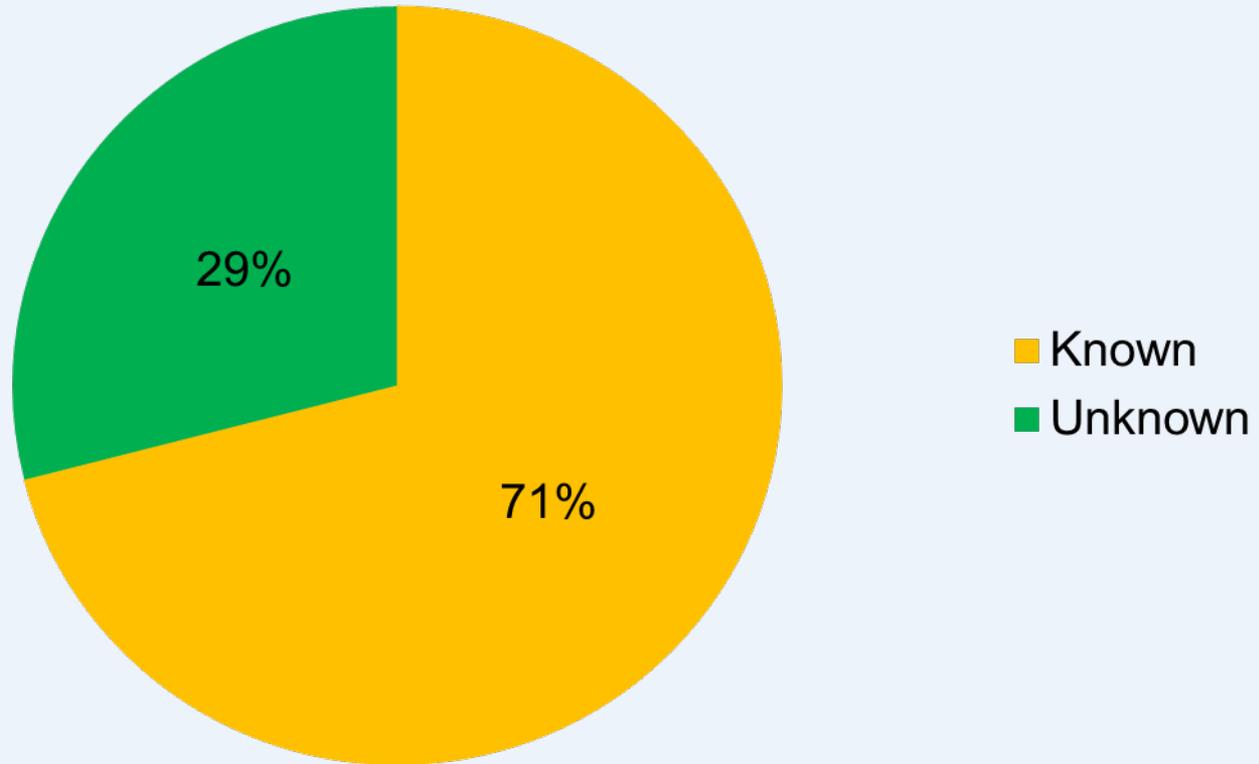
\*Including outbreaks with both known and unknown etiology.

# Incidence of Foodborne Disease Outbreaks\* by State, U.S., 2013

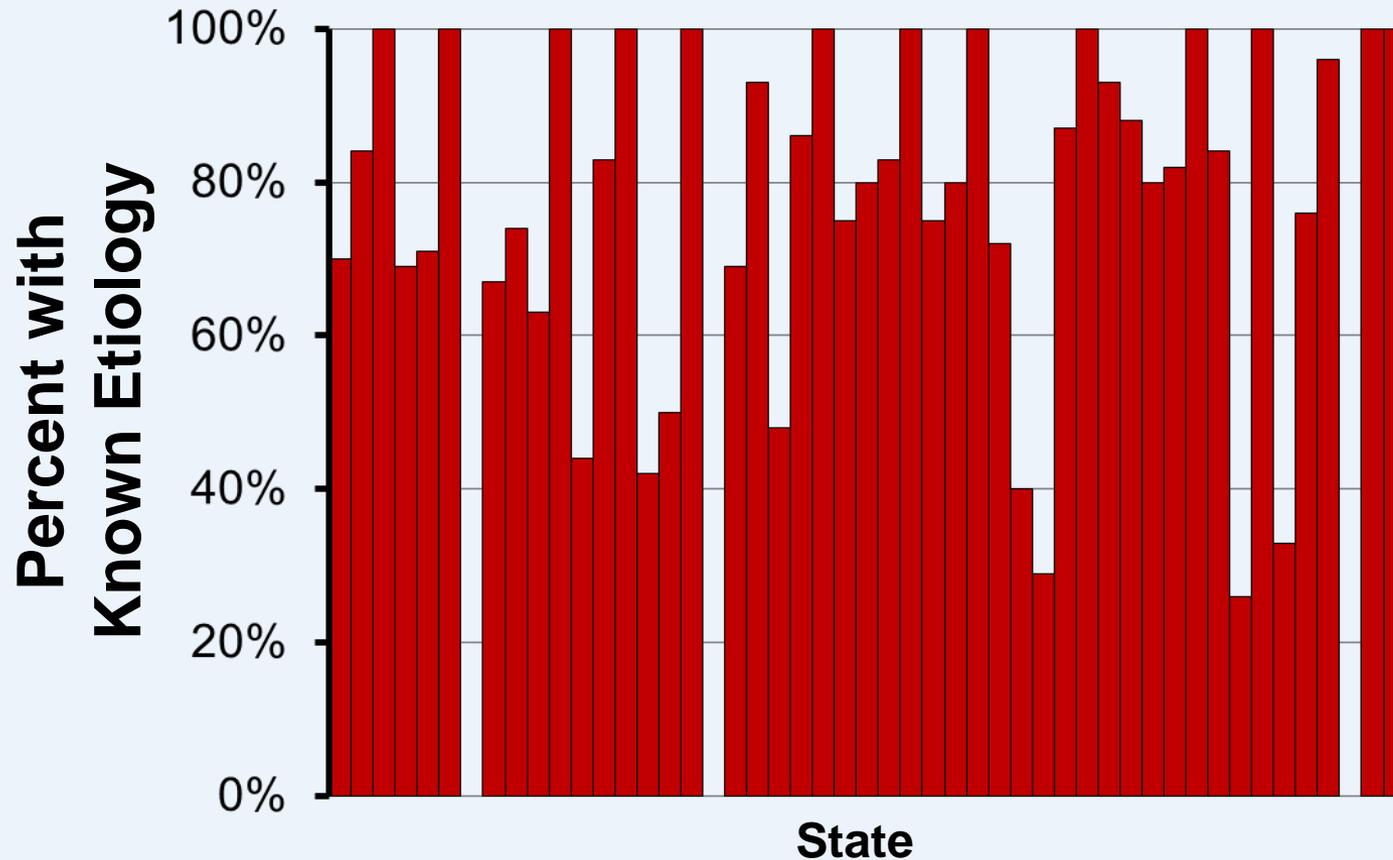


\*Including outbreaks with both known and unknown etiology.

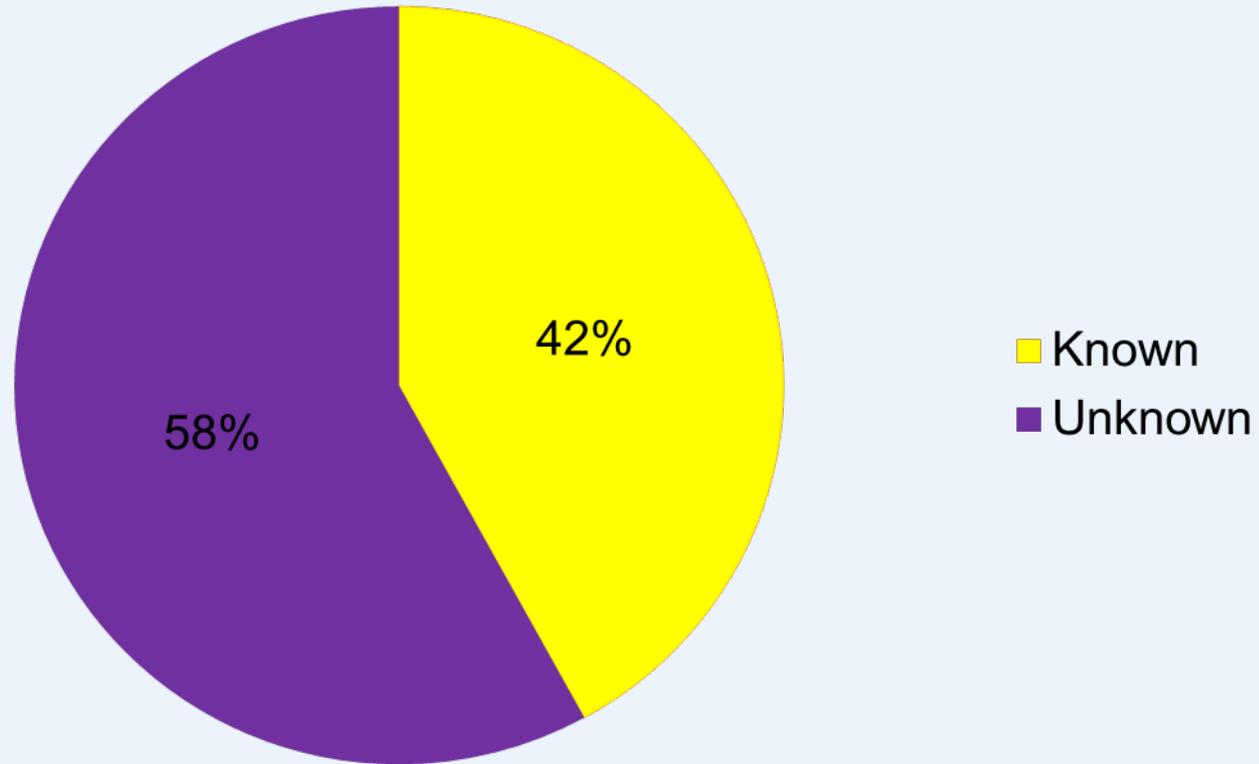
# Foodborne Disease Outbreaks Etiology, U.S., 2011-2013



# Foodborne Disease Outbreaks with a Known Etiology by State, U.S., 2013



# Foodborne Disease Outbreak Vehicle, U.S., 2011-2013

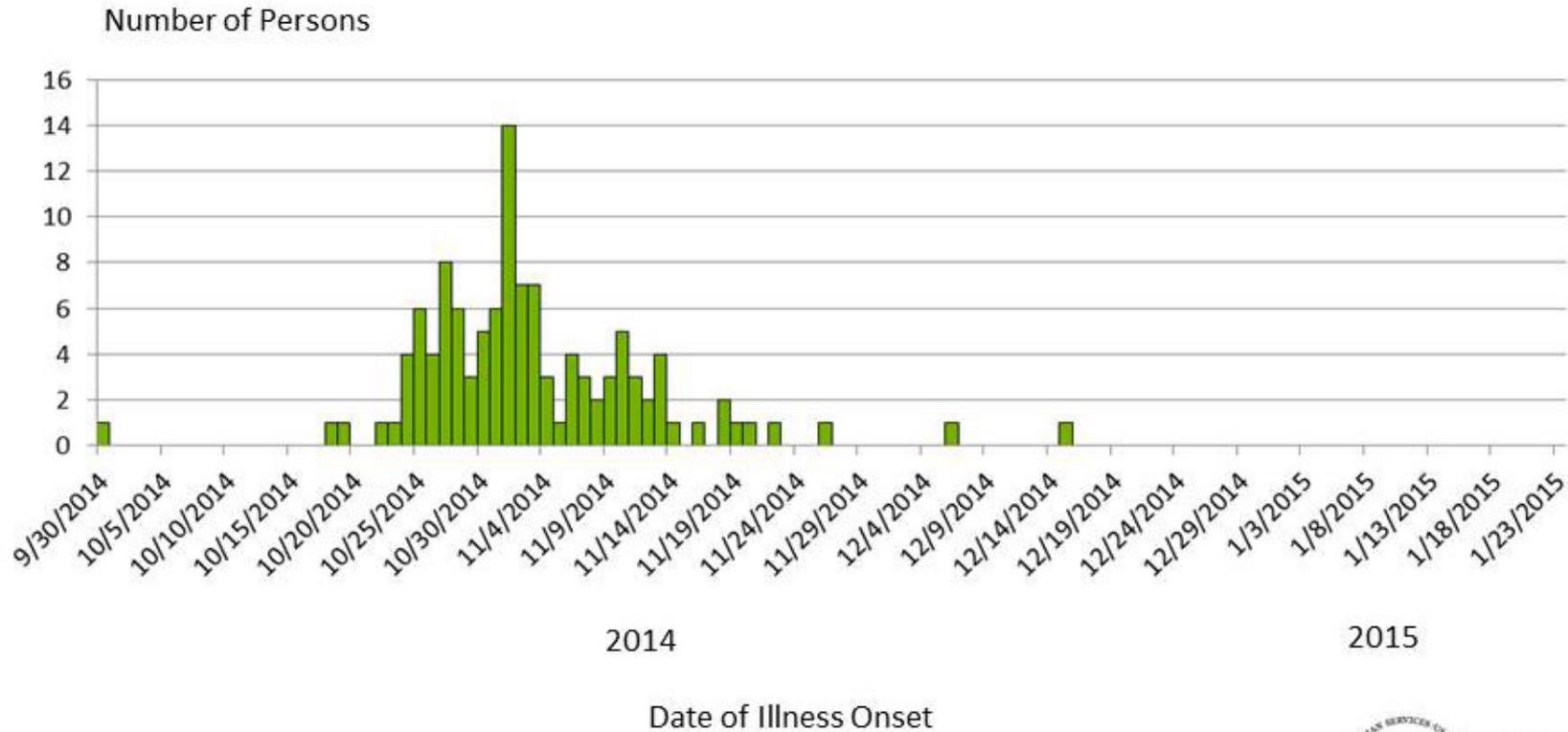


# Multi-state foodborne outbreaks 2006-2010

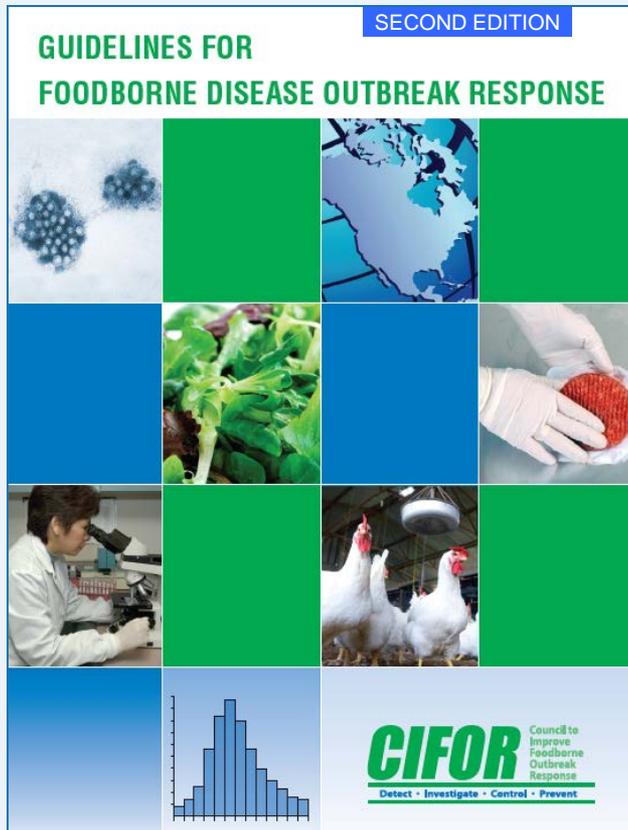
- 2006 - *E. coli* O157 and bagged spinach \*
- 2006 - *E. coli* O157 and shredded lettuce (restaurant chain A)
- 2006 - *E. coli* O157 and shredded lettuce (restaurant chain B)
- 2006 - Botulism and commercial pasteurized carrot juice \*
- 2006 - *Salmonella* and fresh tomatoes
- 2007 - *E. coli* O157 and frozen pizza
- 2007 - *Salmonella* and peanut butter \*
- 2007 - *Salmonella* and a vegetarian snack food \*
- 2007 - *Salmonella* and dry dog food \*
- 2007 - *Salmonella* and microwavable pot pies \*
- 2007 - *Salmonella* and dry puffed rice breakfast cereal \*
- 2007 - *E. coli* O157 and ground beef
- 2007 - Botulism and canned chili sauce \*
- 2008 - *Salmonella* and cantaloupe
- 2008 - *E. coli* O157 and ground beef
- 2008 - *Salmonella* and fresh produce items \*
- 2009 - *Salmonella* and white pepper \*
- 2009 - *Salmonella* and peanut butter containing foods
- 2009 - *E. coli* O157 and raw cookie dough \*
- 2009 - *Salmonella* and black pepper crusted salami \*

• A new food vehicle in 12/20 outbreaks

# Multistate *S. Enteritidis* - Bean Sprouts



# CIFOR *Guidelines*



- Developed by representatives from state, local, and federal level as well as all disciplines
- Based on existing guidelines and practices
- Incorporated input from external reviewers and public review process
- First released in 2009, revised in 2014

# Purpose of CIFOR *Guidelines*

- Help agencies improve foodborne outbreak detection and response
- Provide a comprehensive resource for food safety programs
- Harmonize foodborne disease investigation work across agencies and jurisdictions

# *Guidelines Chapters*

1. Overview of CIFOR Guidelines
2. Fundamental Concepts of PH Surveillance and FBD
3. Planning and Preparation
4. FBD Surveillance and Outbreak Detection
5. Investigation of Clusters and Outbreaks
6. Control Measures
7. Multijurisdictional Outbreaks
8. Performance Indicators
9. Legal Preparation

# Benefits

- Identify good practices
- Less valuable practices?
- New ideas
- Models
- Self-evaluation tools
- Identify needs and way forward

POLICY NUMBER: 222.39  
DIVISION: Environmental Public Health  
POLICY TITLE: Foodborne Illness Complaint Investigations  
AGENCY(ies): Lincoln-Lancaster County Health Department  
AUTHORITY: Board of Health

**POLICY STATEMENT:**

Each foodborne illness/outbreak complaint will be considered priority and investigated by the Food Safety Program within 24 hours. All complaints pertaining to a food or food establishment will be kept in a LLCHD digital record management system. Documentation of the complaint investigation shall be complete and accurate.

Foodborne illness shall be defined as any disease caused by ingestion of contaminated food. Foodborne outbreak shall be defined as the occurrence of two or more cases of a similar illness resulting from the ingestion of a common food, or single cases of certain rare and serious conditions, such as gastrointestinal anthrax, botulism, or cholera.

**Appendix 1 Glossary - Page 249**

A Registered Environmental Health Specialist (EHS) in the Food Safety Program shall be designated as the Lead Environmental Health Investigator.

**PROCEDURE:**

I. Receiving a Complaint. All foodborne illness complaints received by the food safety program will be processed as follows:

A. Any EHS will thoroughly complete the Foodborne, Waterborne, Enteric Illness Report form (Exhibit 1). The EHS shall initialize a complaint in Permits Plus and all information shall be documented in Permit Plus and/or scanned into the complaint case.

**4.2.10.3 Case interviews - Page 122**

# Use of CIFOR Guidelines to Address Requirements of FDA Standard #5

**Scott Holmes, REHS, MS**  
Lincoln-Lancaster County  
Health Department

- III. The EHS shall perform an environmental health investigation of the implicated food or food establishment(s) in a time appropriate response to the type or severity of the illness, but in no case more than 24 hours. An environmental health investigation is a systematic, detailed, science-based evaluation of environmental factors that contributed to transmission of a particular disease in an outbreak.
- A. Upon identification of the person in charge, the EHS will emphasize that the purpose of the investigation is to determine events or activities that may have contributed to an illness/outbreak of a foodborne disease so that measures can be taken to prevent reoccurrence.
- B. An on-site investigation shall include the observance of potential sources that may be responsible for a foodborne illness. The goals of an environmental health investigation are to identify:
1. possible points of contamination of the implicated food with the disease agent,
  2. whether the causative agent could have survived (or, in the case of a toxin, not been inactivated),
  3. whether conditions were conducive for subsequent growth or toxin production by the disease agent, and
  4. antecedents that resulted in the conditions allowing the outbreak to happen.

#### **5.2.4.1.6 Conduct an Environmental Assessment - Pg 157**

- C. Responsibilities of the EHS investigating the complaint may include any or all of the following:
1. investigates food-preparation sites, including sites involved with growing, raising, processing, manufacturing, packaging, storing, and preparing food;
  2. collects environmental and food samples;
  3. reports results;
  4. arranges for testing of samples;
  5. coordinates food sampling, management and testing procedures with the NDOA;
  6. interviews food workers and managers;
  7. reviews food-preparation and food-handling records;
  8. reviews food inventory and distribution records, food flow, and contributing factors;
  9. consults with epidemiologic and laboratory investigators; and/or
  10. assist Communicable Disease to interview cases and conduct traceback investigations.

### **3.2.2.3 Environmental Investigator responsibilities - Pg 97**

- D. Any needed enforcement action will be taken per Policy 222.31- Food Establishment Enforcement.
- E. Investigation findings shall be documented in an InspeCTab report or on an Environmental Public Health Inspection Report “short form.” The investigation reports shall be downloaded or scanned into the establishment’s digital file.

# **CIFOR *Guidelines* Toolkit and Process**

**Joe Russell, RS, MPH**  
Flathead City-County  
Health Department

# CIFOR *Guidelines* Challenge

- Lengthy document
- A wide range of recommended practices
- Implementation of any particular recommendation in the *Guidelines* depends on
  - Agency factors
  - Outbreak-specific factors

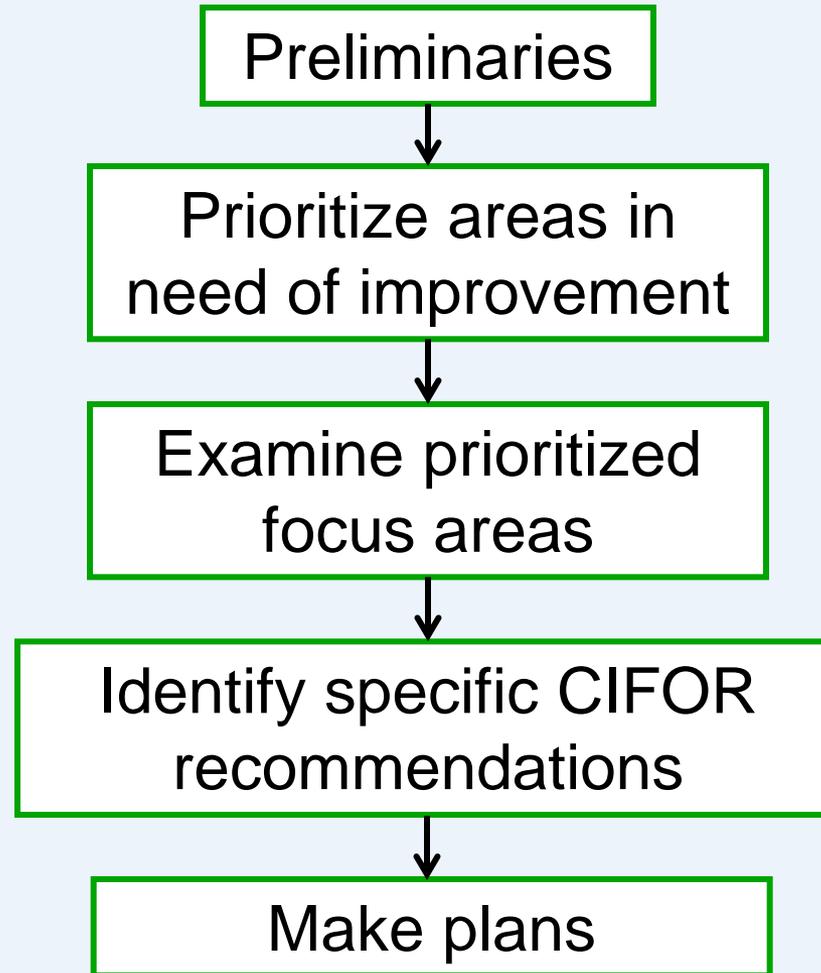
# CIFOR Toolkit

A **process (and supporting materials)** to help agencies and jurisdictions:

- Better understand foodborne disease outbreak response activities.
- Prioritize areas in need of improvement.
- Identify appropriate activities to improve performance.
- Make plans to implement those activities.



# Provides a Process



# Brings the Right People Together

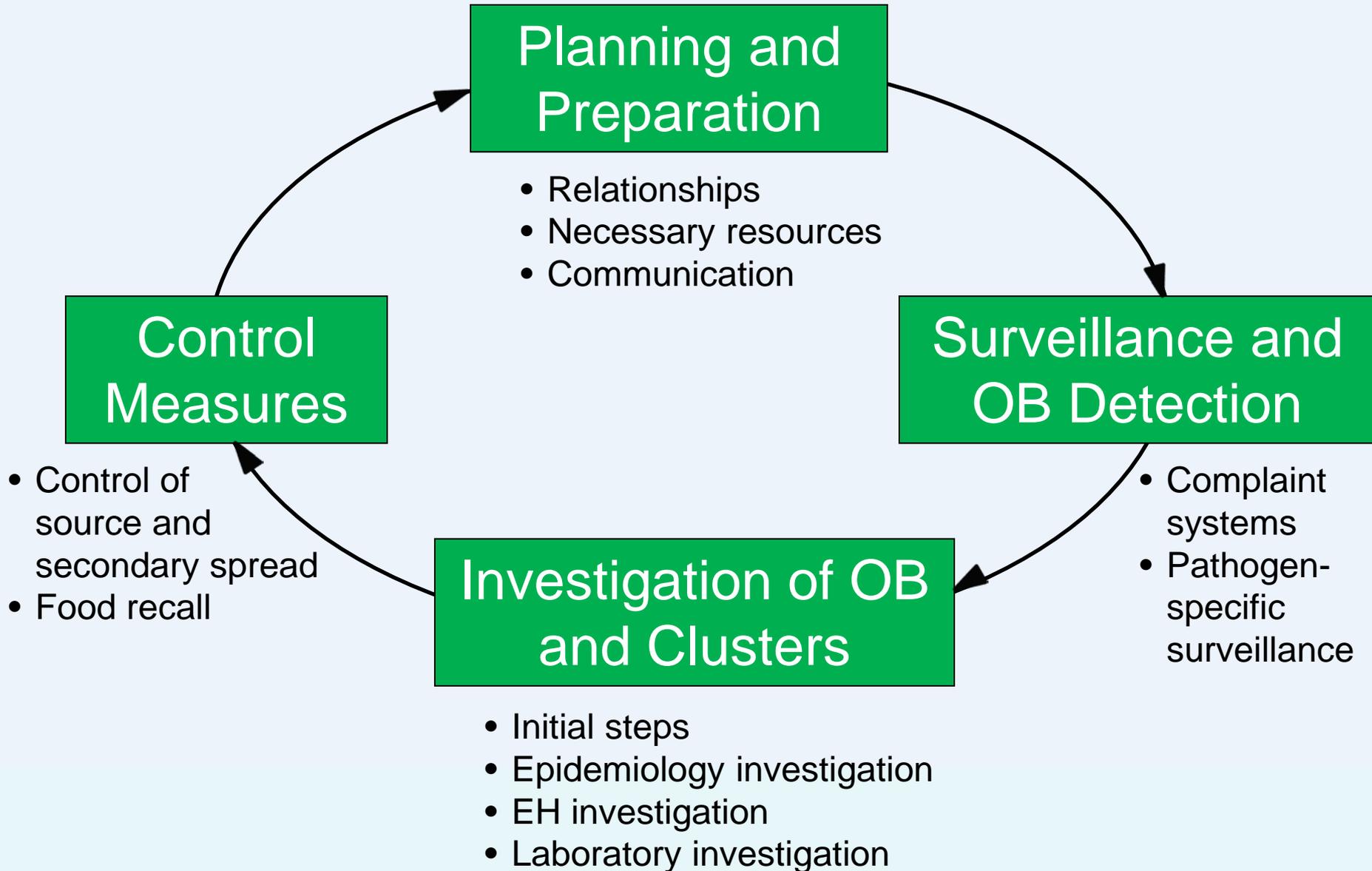
- Interdisciplinary workgroup with knowledge and practical experience in foodborne diseases and outbreaks
- Provides a broader context for assessing activities across agencies and disciplines
- Allows participants to grow as a team



# Allows Users to Focus Efforts

- Breaks down outbreak response into tracks and focus areas (manageable chunks)
- Provides “keys to success” to help identify areas in need of improvement
- Categorizes CIFOR recommendations by focus area and key to success

# Tracks and Focus Areas





# Evaluation from Toolkit Users

Of users who submitted an evaluation (N=440)

- 81% said it was easy to use
- 89% said it supported a meaningful examination of outbreak response activities and areas in need of improvement
- 88% said it helped identify CIFOR recommendations to improve local response

# Toolkit Feedback

“The Toolkit distills the *Guidelines* into a series of tasks. It breaks [the Guidelines] down and makes it much easier to understand and figure out where to start and what to do. Breaks it down into manageable actions...”

“The Toolkit was good at in-depth rather than overview. [It helped us] come up with goals and action items. That’s what we wanted to do. [To] really implement something.”

# **CIFOR *Guidelines* and Toolkit Implementation Training Grants**

**Dhara Shah, MPH**  
Council of State and Territorial  
Epidemiologists

# CIFOR *Guidelines* and Toolkit Implementation Training Grants

- Intended to provide small grant support to interested state and large urban health departments\* to conduct training workshop(s) using the *Guidelines* and Toolkit
- Grant funds (~\$5000) can be used for:
  - Travel support (for facilitators/trainers)
  - Meeting room space
  - Renting A/V equipment
  - Facilitator contract and other training-related expenses
- Trainings must be completed by May 31, 2016

\*Large urban health departments = 1,000,000+ population size

# Intended Audience

- The training workshops should bring together multidisciplinary food safety investigation teams together, including but not limited to:
  - State Epidemiologist
  - State-level foodborne disease epidemiologists
  - Laboratory scientists
  - Environmental health specialists
  - Senior level regulators
  - Senior level representatives from the State Department of Agriculture
  - Public health nurses, if appropriate

# Timeline

- RFP Release Date: October 14, 2015
- Application Deadline: November 25, 2015
- Award Notifications: December 15, 2015
- Anticipated Award Date: December 22, 2015
- Training(s) Completion Date: May 31, 2016
- Final Summary Report Deadline: June 30, 2016

*\*\* Please note the above listed dates are subject to change \*\**



**Donald Sharp, MD, DTM&H**  
Centers for Disease Control  
and Prevention

# What do the Centers do?

- Develop resources and tools
- Mentor health departments
- Assist health departments in self-evaluations
- Provide in-person and online trainings
- Support academic education programs

# Where and Who are the Centers?

## ★ Colorado

- Colorado Department of Public Health and Environment
- Colorado School of Public Health

## ★ Florida

- Florida Department of Health
- University of Florida

## ★ Minnesota

- Minnesota Department of Health
- University of Minnesota SPH

## ★ Oregon

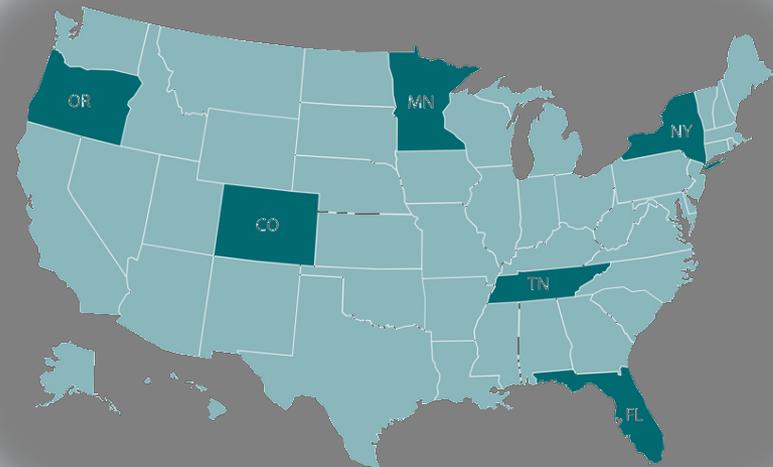
- Oregon Public Health Division
- University of Minnesota SPH

## ★ Tennessee

- Tennessee Department of Health
- University of Tennessee

## ★ New York

- New York State Department of Health
- Cornell University



# Examples of CoE Services

- Classroom training courses (e.g. Epi-Ready)
- Real time consultation on outbreaks
- Self-assessments using
  - *CIFOR Guidelines Toolkit*
  - CIFOR 16 Metrics with Target Ranges
- Illness complaint system consultation
- Student outbreak response team advice

# Examples of CoE Products

- Instructional videos (e.g., collecting stool samples, interviewing) and short guides
- On-line courses (just-in-time, basic, and intermediate) and case studies
- Outbreak questionnaires
  - Hypothesis generation
  - Specific subpopulation
  - Specific foods or settings
- Food-specific fact sheets (including production facts and related outbreaks)
- Newsletters

# <http://www.cdc.gov/foodsafety/centers>

- **Fact Sheet**

<http://www.cdc.gov/foodsafety/centers/resources.html>

The fact sheet is a two-page document housed on the CDC website that provides a quick overview of the program.

- **Newsletter**

<http://www.cdc.gov/foodsafety/centers/resources.html>

The *Centered on Food Safety* newsletter is published quarterly to highlight recent CoE products and activities. Newsletters are housed on the CDC website.

- **Product Website**

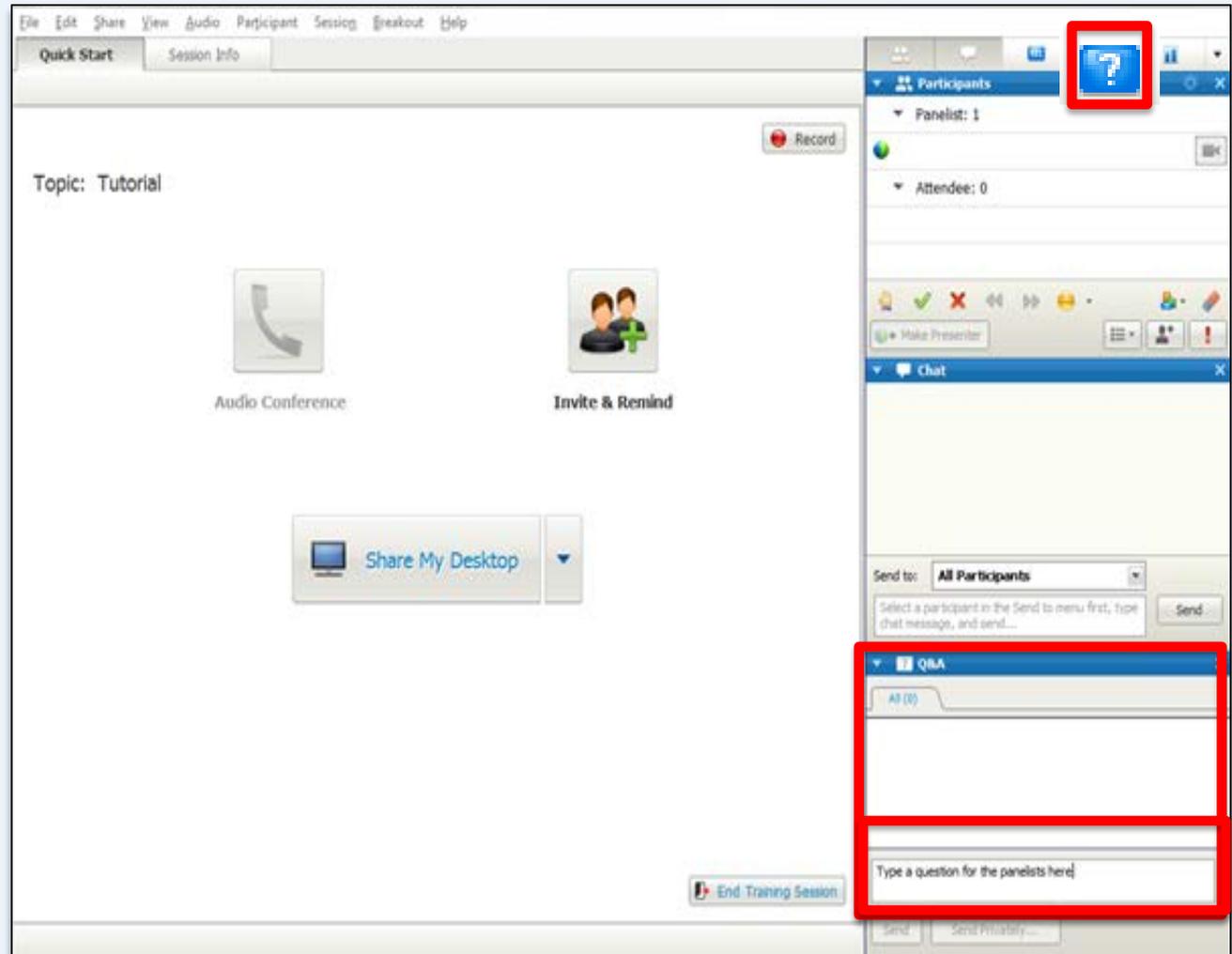
<http://www.CoEFoodSafetyTools.org/>

The Centers maintain a website of all of their online products. The website is maintained by the Florida Center.

- **Twitter [@FoodSafetyCoE](#)**

# To Ask a Question

- Click on the blue question mark tab on the top right panel of your screen
- This will open the Q&A box on the bottom right panel on your screen
- Type a question
- Send questions to All Panelists



# Thank you for participating!

- Please complete the webinar evaluation:  
<https://www.research.net/r/CIFORToolkit1>
- The webinar recording & slides will be available on the CIFOR website at [www.cifor.us](http://www.cifor.us)
- Please register for the next webinar in the series!

## **CIFOR Guidelines and Toolkit Implementation Webinar for Public Health Professionals**

Wednesday, October 7, 2015 at 2:00pm Eastern

<https://csteevents.webex.com/csteevents/onstage/g.php?d=663372545&t=a>