

CDC Update to the Conference for Food Protection

Pat Breysse, PhD, CIH

**Director, National Center for Environmental Health and
Agency for Toxic Substances and Disease Registry**

August 9, 2021

Updates on the Activities of...

- **National Center for Environmental Health (NCEH)**
- **National Center for Immunization and Respiratory Diseases (NCIRD)**
- **National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)**

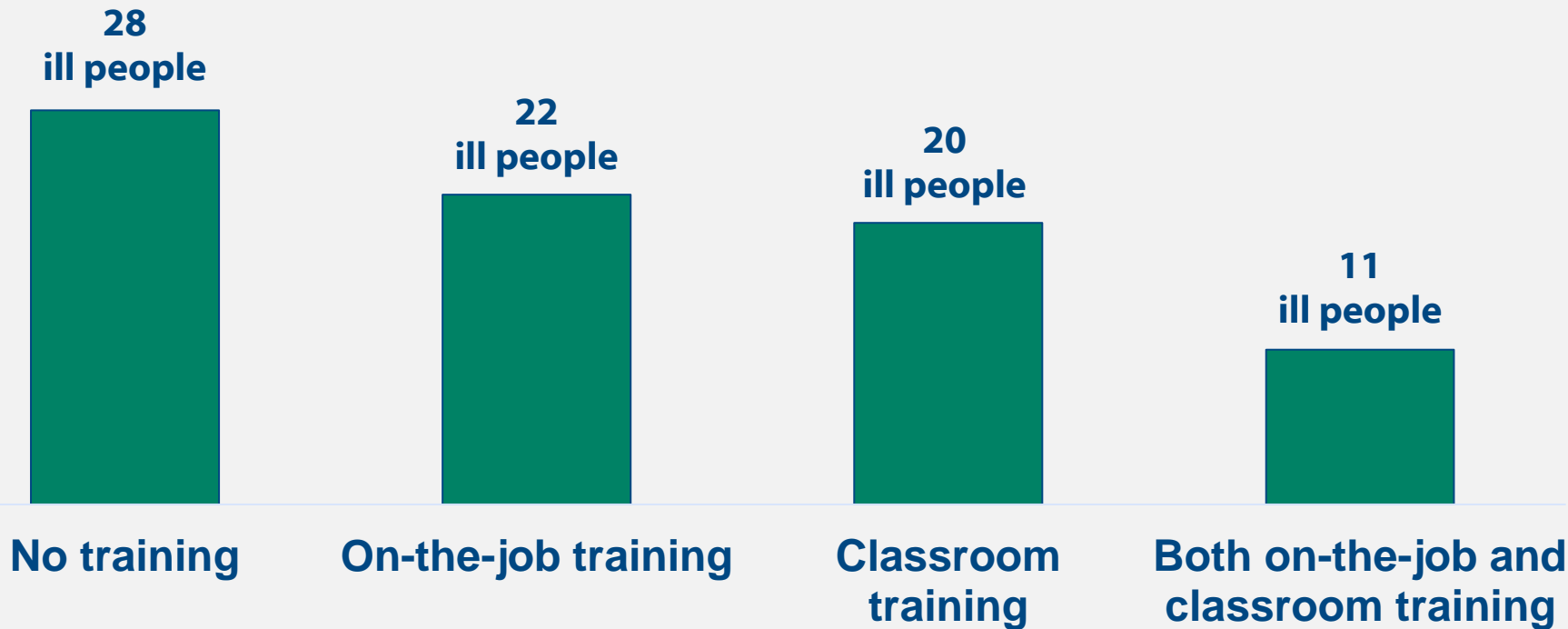
National Center for Environmental Health (NCEH)

Environmental Health (EH) Surveillance on Retail-Related Foodborne Illness Outbreaks

- Moved and updated the data entry system
- Published NEARS data that informs prevention and investigation
 - Identified food safety gaps in outbreak establishments
 - Identified outbreak investigation barriers

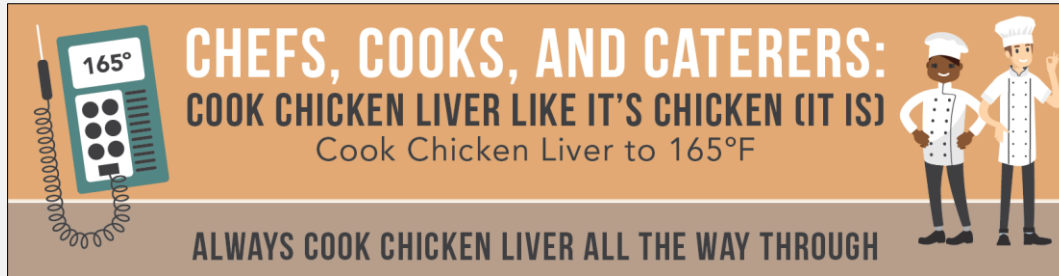


Restaurants that provide staff food safety training have smaller norovirus outbreaks.



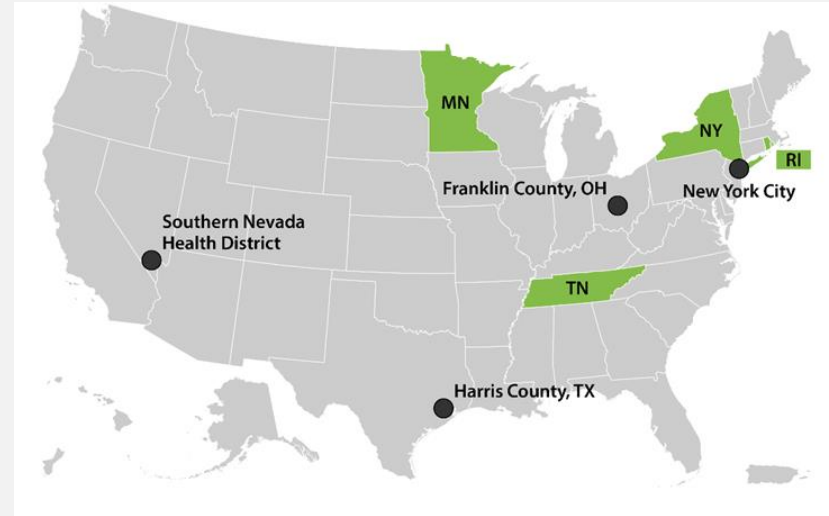
Hoover et al. (2020)

Developing Retail Food Safety Infographics

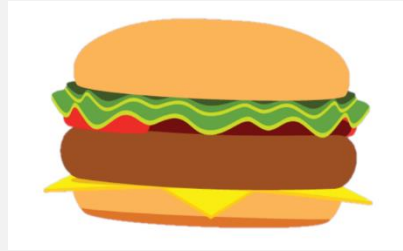


Conducting Food Safety Research with the Environmental Health Specialists Network (EHS-Net)

- **EHS-Net celebrated 20 years**
 - 52 articles
 - 25 plain language summaries
 - 4 infographics
- **Research has impacted policies and guidelines driving restaurant food safety across the nation**



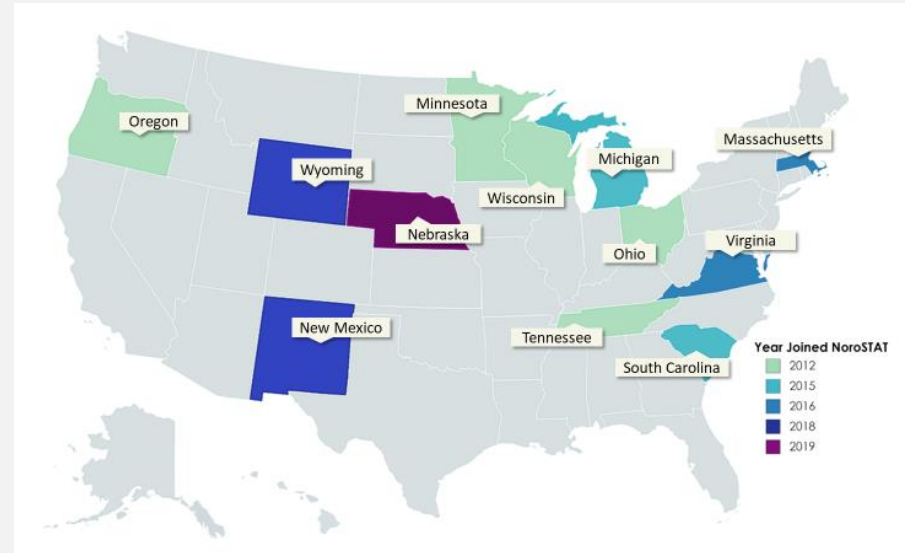
Findings have informed significant, national food safety policy and practices guidelines.



National Center for Immunization and Respiratory Diseases (NCIRD)

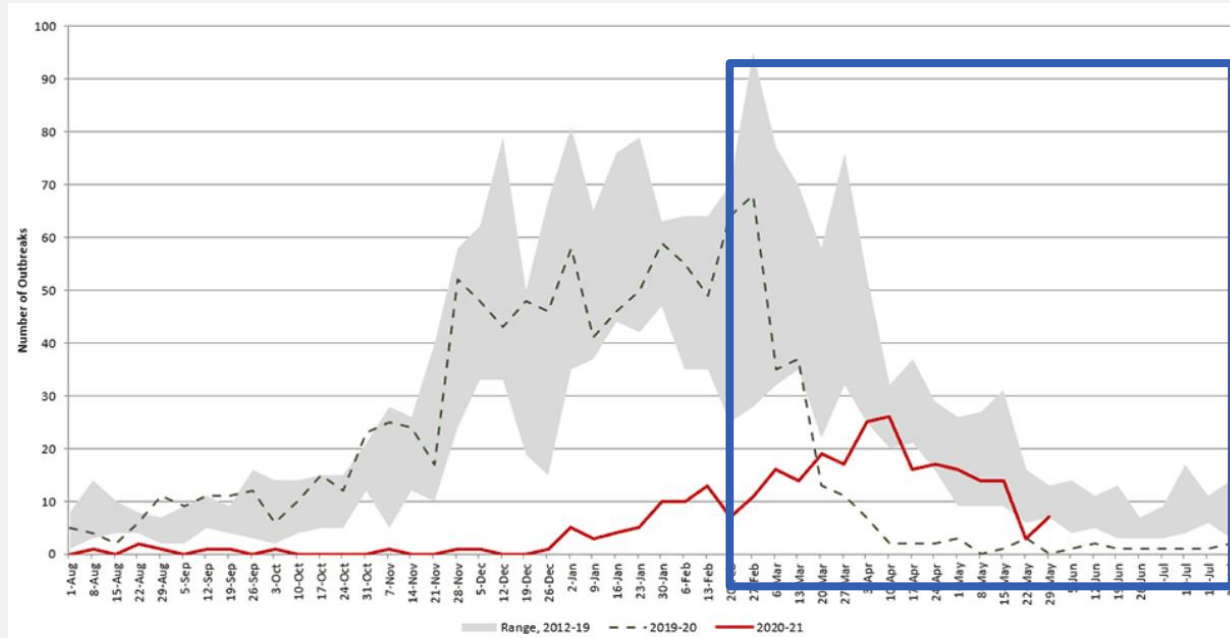
Norovirus Sentinel Testing and Tracking (NoroSTAT)

- **Near-real time reporting of norovirus outbreaks by network of 12 sentinel states**
 - Selected sites provide broad national coverage
 - Rapidly assess the impact of emergent strains
 - Improved timeliness, completeness, and linking of outbreak reports in NORS and CaliciNet



Leshem 2013 EID
Shah 2017 MMWR

Norovirus Outbreak Reporting, 2019-2020

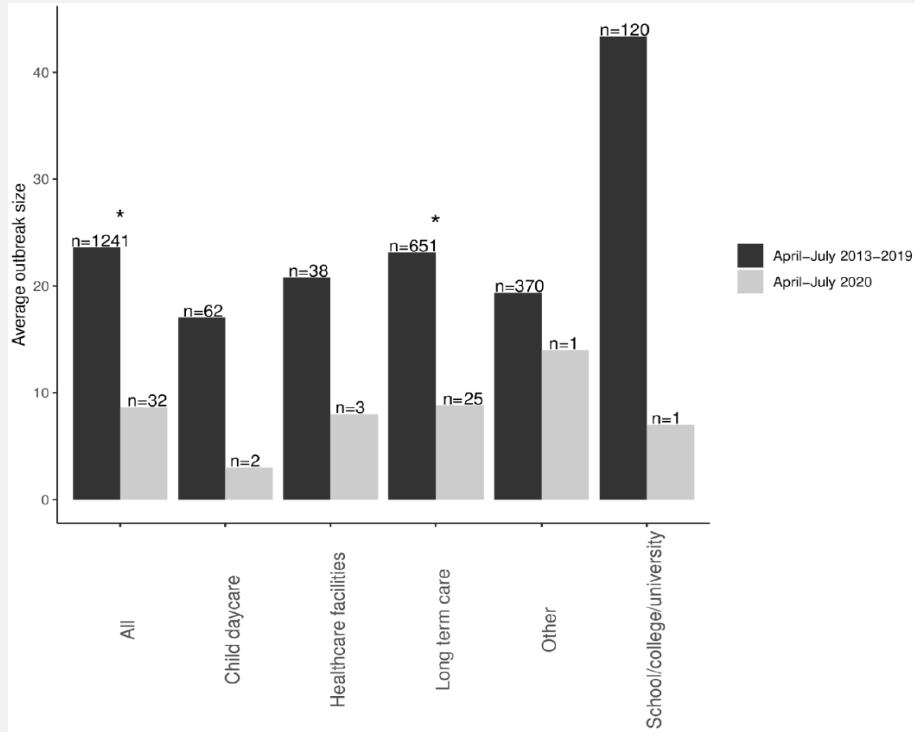


Possibilities for decrease in reporting:

- Underreporting
- Non-pharmaceutical interventions (NPIs) for COVID-19
 - Handwashing
 - Social distancing
 - Facility closures

www.cdc.gov/norovirus/reporting/norostat/data.html

Impact of Non-Pharmaceutical Interventions for SARS-CoV-2 on Norovirus Outbreaks



NPI implementation during April - July 2020 significantly associated with:

- Reduced number of reported norovirus outbreaks
- Reduced median outbreak size in all settings

National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)

Preventing Foodborne Diseases

- In the summer of 2019, DFWED created the Prevention Office, which focuses on translating epidemiological and laboratory findings into public health interventions
- The Prevention Office is responsible for preventing not only foodborne diseases but also waterborne diseases, enteric zoonoses, and fungal infections
- Working with internal and external partners, the Prevention Office is addressing the following foodborne disease prevention priorities:
 - Beef and *Salmonella*
 - Chicken and *Salmonella*
 - Leafy greens and STEC
 - Shellfish and *Vibrio*
- For more information, please contact Sam Crowe at yeo2@cdc.gov

The Evolution of Foodborne Laboratory Surveillance: Implementing Next Generation Molecular Surveillance Methods

Yesterday



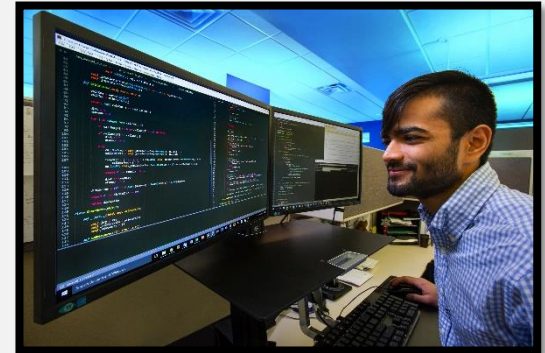
PFGE

Today



WGS

Tomorrow

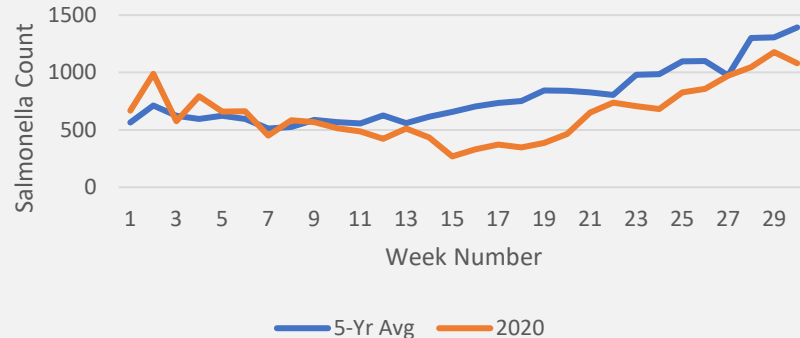


Metagenomics

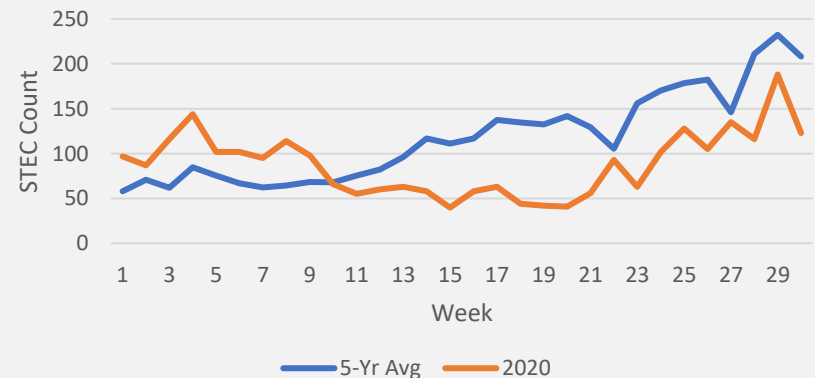
Effect of COVID on PulseNet

- **PulseNet experiencing fewer submissions from states**
- **Some states have paused PulseNet sequencing or have delayed turn arounds**
- **Fewer outbreak clusters detected in PulseNet compared to what we were projected to detect with WGS implemented**

Human **Salmonella** Uploads to PulseNet,
5-yr Average Compared to 2020, by Week



Human **STEC** Uploads to PulseNet,
5-yr Average Compared to 2020, by Week



Current FoodCORE and OutbreakNet Enhanced Resources

- Annual metrics summaries
- Model Practices (FoodCORE)
- Success Stories

Performance Metrics: (See FoodCORE website for complete language and definitions)	<i>Salmonella</i> Mean (Range)	STEC Mean (Range)	<i>Listeria</i> Mean (Range)	<i>Shigella</i> Mean (Range)	<i>Campylobacter</i> Mean (Range)
1a. Total number of isolates and isolate-yielding specimens	1082 (398–1661) n=10	239 (79–453) n=10	22 (2–51) n=10	182 (33–665) n=9	475 (70–1287) n=8



Complaint Systems and Effective Surveillance
Creative Public Health Messaging
Epi-Ready in Kentucky
Student Teams
Virginia “Cracks the Case”

<https://www.cdc.gov/foodcore/>

<https://www.cdc.gov/foodsafety/outbreaknetenhanced/index.html>

Integrated Food Safety Centers of Excellence (CoEs)



Strengthen & Improve
surveillance and outbreak
investigations



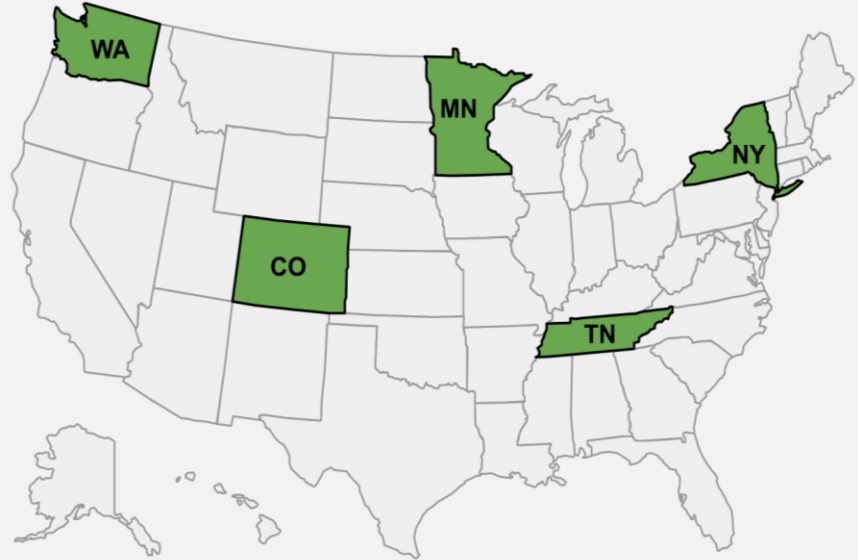
Train & Educate
students and public health
personnel



Evaluate & Analyze
the timeliness and
effectiveness of surveillance
and outbreak response

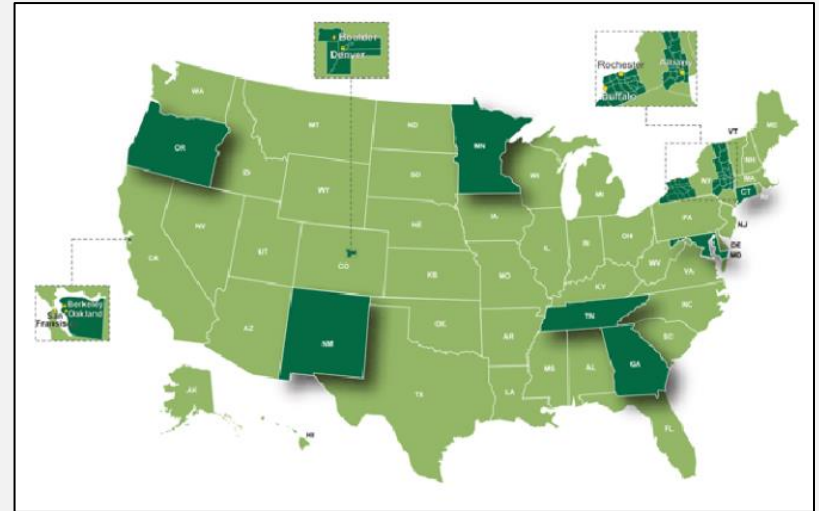


Disseminate & Communicate
tools and resources



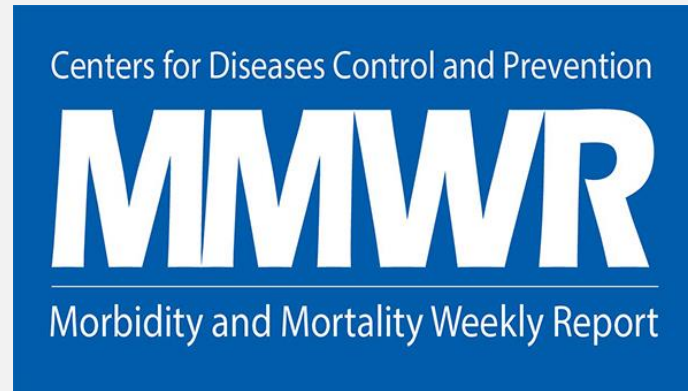
FoodNet: Foodborne Diseases Active Surveillance Network

- Conducts active, population-based surveillance for 8 pathogens and hemolytic uremic syndrome in 10 sites
- Surveillance includes infections diagnosed by culture-confirmed and culture-independent tests (CIDT)
- Collects data on clinical laboratory testing practices for more than 650 laboratories in FoodNet surveillance catchment areas
- Conducts and analyzes the FoodNet population survey



Upcoming FoodNet Publication of Interest

“Decreased Incidence of Infections Caused by Pathogens Transmitted Commonly Through Food During the COVID-19 Pandemic — Foodborne Diseases Active Surveillance Network, 10 U.S. Sites, 2017–2020”

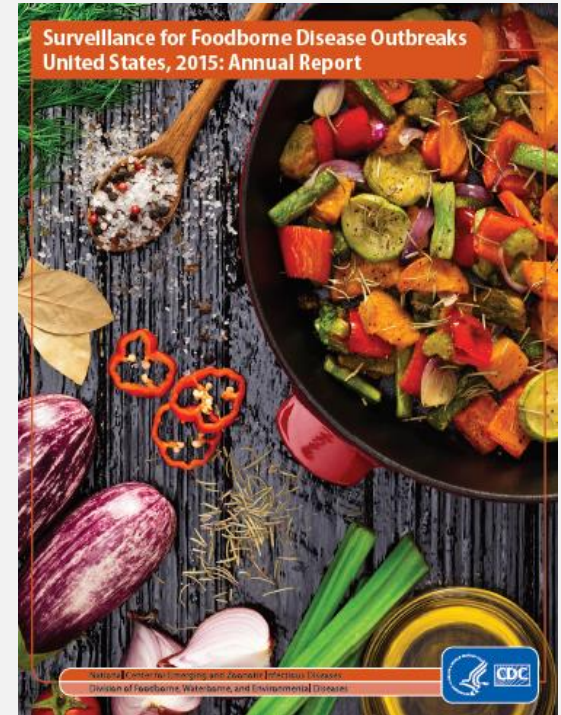


NORS: National Outbreak Reporting System

FDOSS: Foodborne Disease Outbreak Surveillance System

- Foodborne outbreak data
 - patient demographics
 - pathogen
 - food vehicle
 - outbreak setting
 - contributing factors
- Outbreak summaries for 1998–2017 available on the FDOSS website

<https://www.cdc.gov/fdoss/annual-reports/index.html>



Highlights from the 2017 FDOSS Annual Report

- **841 foodborne disease outbreaks reported by 50 states, Washington, D.C., and Puerto Rico**
 - 14,481 illnesses
 - 827 hospitalizations
 - 20 deaths
 - 14 food recalls
- **32 multistate outbreaks reported**
- **Restaurants were associated with 489 outbreaks**
- **Single food categories associated with the most illnesses**
 - Turkey: 609
 - Fruits: 521
 - Chicken: 487
 - Pork: 376
- **Most common confirmed pathogens**
 - Norovirus: 140 outbreaks
 - *Salmonella*: 113 outbreaks

Resources

- www.cdc.gov/nceh/ehs
- <https://www.cdc.gov/foodsafety/centers/index.html>
- <https://wwwn.cdc.gov/norsdashboard/>
- <https://www.cdc.gov/foodcore/>
- <https://www.cdc.gov/foodsafety/outbreaknetenhanced/index.html>



For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 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.

