USDA

United States Department of Agriculture

One Team, One Purpose

Food Safety and Inspection Service

Protecting Public Health and Preventing Foodborne Illness

FSIS UPDATE: CHICKEN LIVER (FEB 2017–PRESENT)

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Why Do We Keep Talking About Chicken Livers?

- Recipe for Illness:
  - Pathogens (External, Internal)
  - Inadequate Cooking
- Outbreaks continue to occur
  - Will present updated surveillance data
- Risk factors identified point to prevention targets
  - Need to promote safe cooking at restaurants
- Research needed on chicken liver
  - Understanding pathogen prevalence; virulence factors; processing interventions; safe cooking methods while retaining palatability

Food Safety and Inspection Service:

Chicken Liver Notoriety

Outbreak tied to chicken livers restaurants 'mortified'

CDC: Salmonella Chicken Liver Outbreak

Campylobacter outbreak due to undercooked chicken livers

Pâté Sickens Six in Washi
Campylobacter

Outbreak tied to chicken livers

Food Poisoning Outbreaks Linked To Chicken Liver

Multistate Outbreak of *Campylobacter Jejuni* I
Undercooked Chicken Livers — Northeast

MMWR

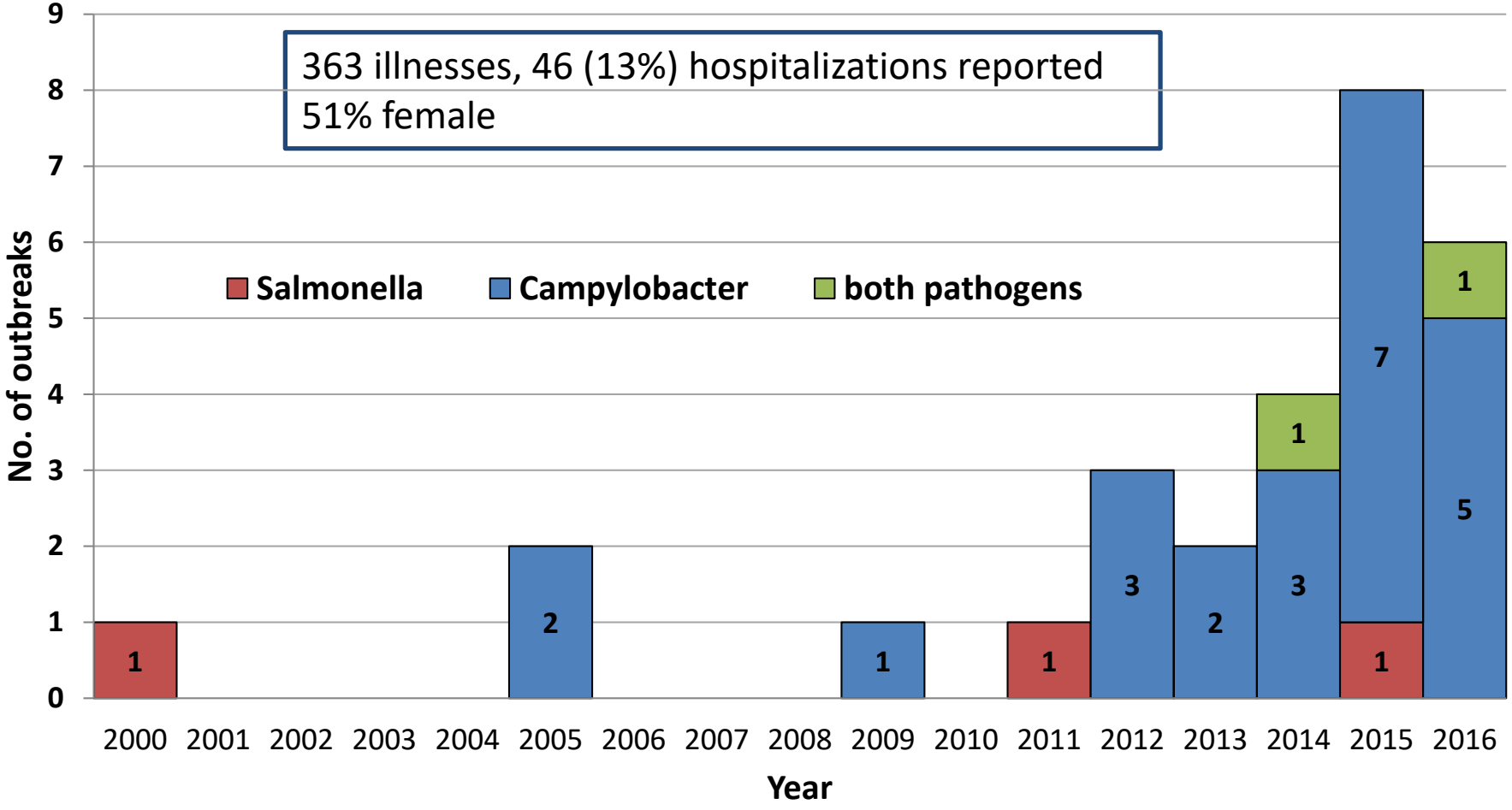
Notes from the Field: Campylobacteriosis
Chicken Liver Pâté — Ohio and Oregon, De

Tainted chicken livers sicken

Chicken Liver Salmonella Outbreak
Sickens 179 from 6 States

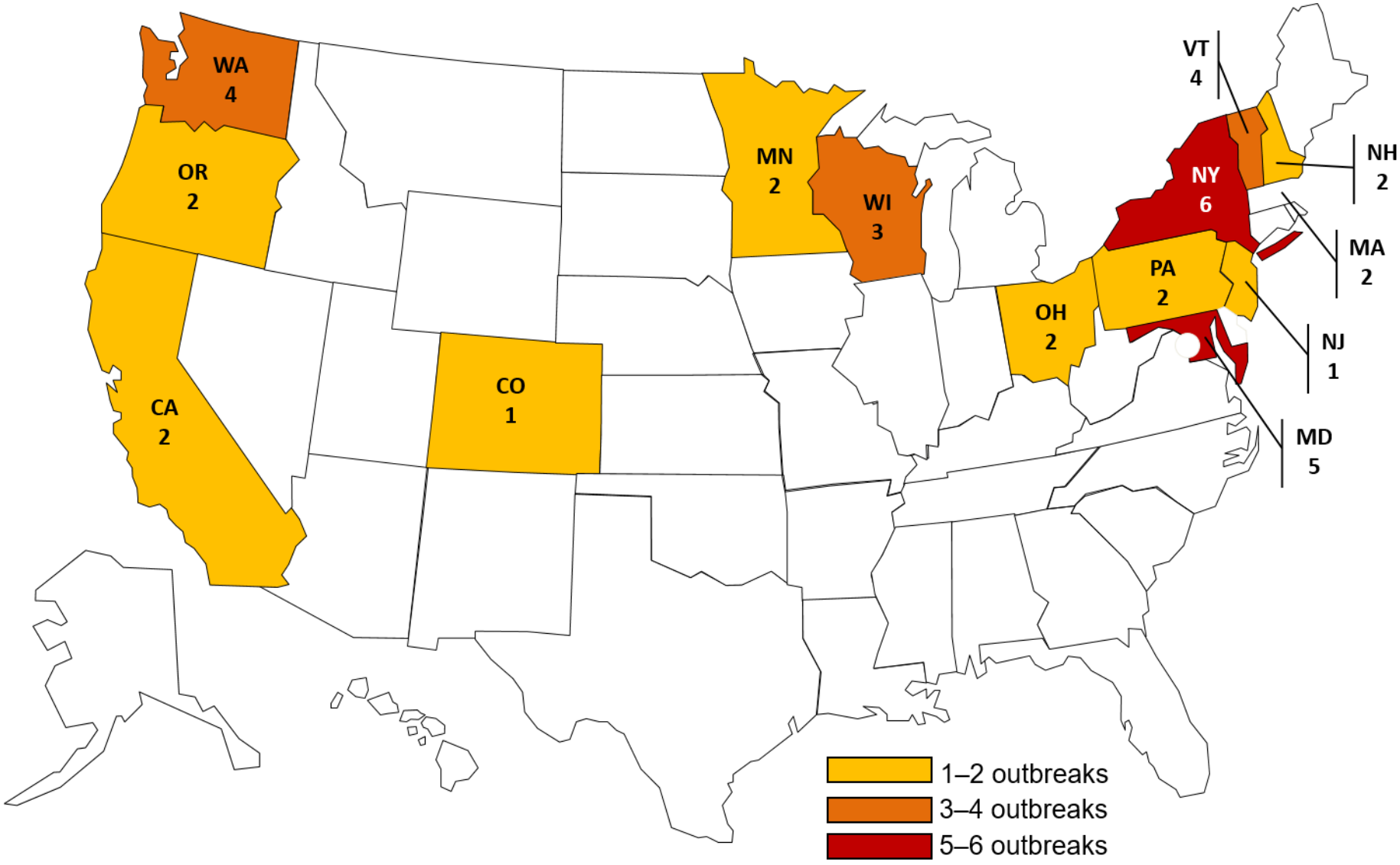
Food Safety and Inspection Service:

Chicken liver–associated campylobacteriosis and salmonellosis outbreaks by year, United States, 2000–2016 (n=28).



Source: FSIS & CDC. National Outbreak Reporting System (NORS). Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention. Data received on 12/08/2017. The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Chicken liver–associated campylobacteriosis and salmonellosis outbreaks by state of case-patient residence, United States, 2000–2016 (n=28).



Common Outbreak Factors: Prevention Targets (2000–2016; n=28)

- Pâté or similar blended dish in 24 (86%)
- Inadequate cooking in 26 (93%)
- Public foodservice setting in 25 (89%)
  - Restaurants specifically in 22 (79%)

The Outbreaks Continue…….

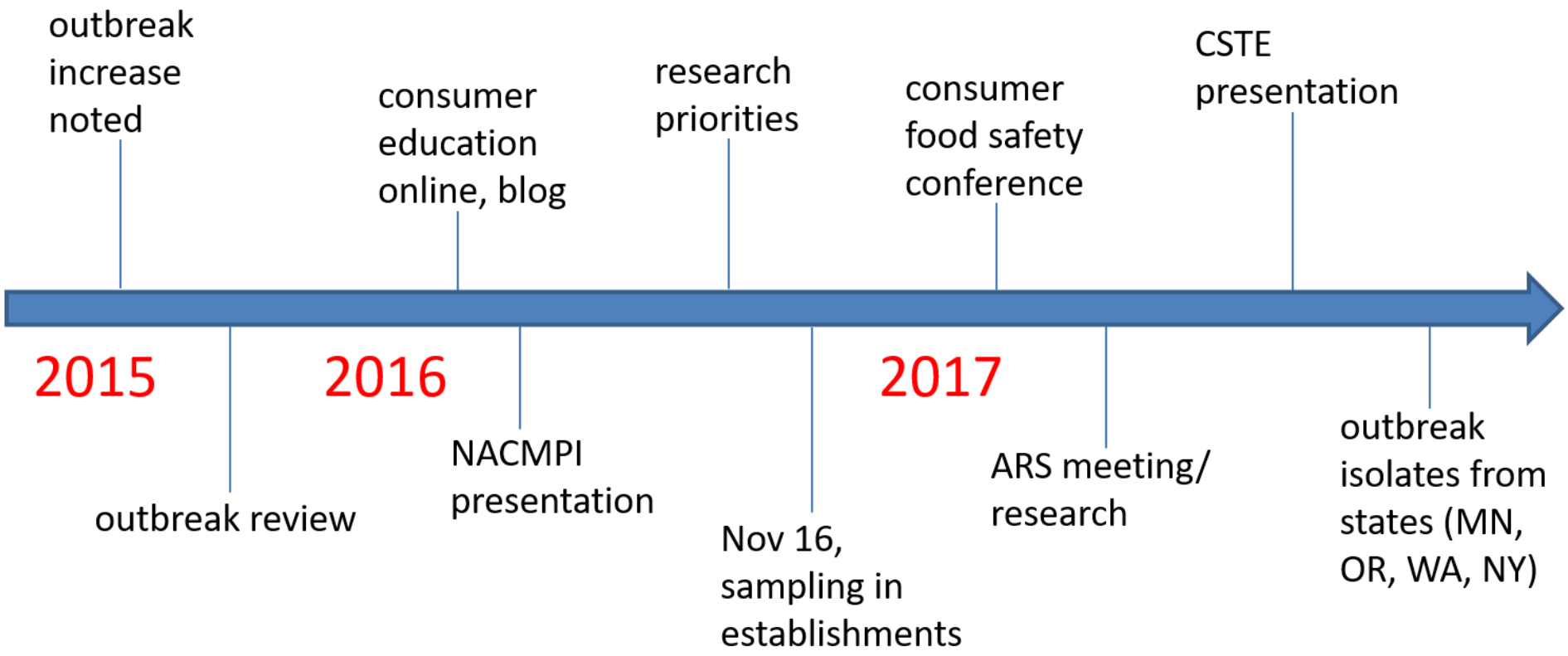
- 4 chicken liver outbreaks detected by FSIS in 2017
  - 3 *Campylobacter*; 1 both *Campylobacter* and *Salmonella*
  - 26 total reported case-patients
  - Restaurant-prepared chicken liver products

- There may have been more outbreaks in 2017
  - In 2015, FSIS heard of 1; there were at least 8
  - In 2016, FSIS heard of 2; there were at least 6
  - In 2018 we've learned about another outbreak in VA.

- Outbreaks represent only small fraction of illnesses

Food Safety and Inspection Service:

FSIS Chicken Liver Activity Timeline



Food Safety and Inspection Service:

FSIS Chicken Liver Sampling Results (Nov 2016–Nov 2017)

- FSIS Notice 72-16
- Rinsate samples

pathogen	# collected and analyzed	# (%) positive
Campylobacter	87	66 (**75.9%**)
Salmonella	85	57 (**67.1%**)

Results signal opportunities for improved pathogen reduction in this chicken part

FSIS Chicken Liver Action Plan (Future Activities)

- Guidance for FSIS establishments
- Infographic for chefs
- Consumer focus groups
- FSIS website updates
- Presentations/peer-reviewed manuscript
- Continuing research to understand risk factors that can be addressed to prevent illness

FSIS Research Priorities—Chicken Liver

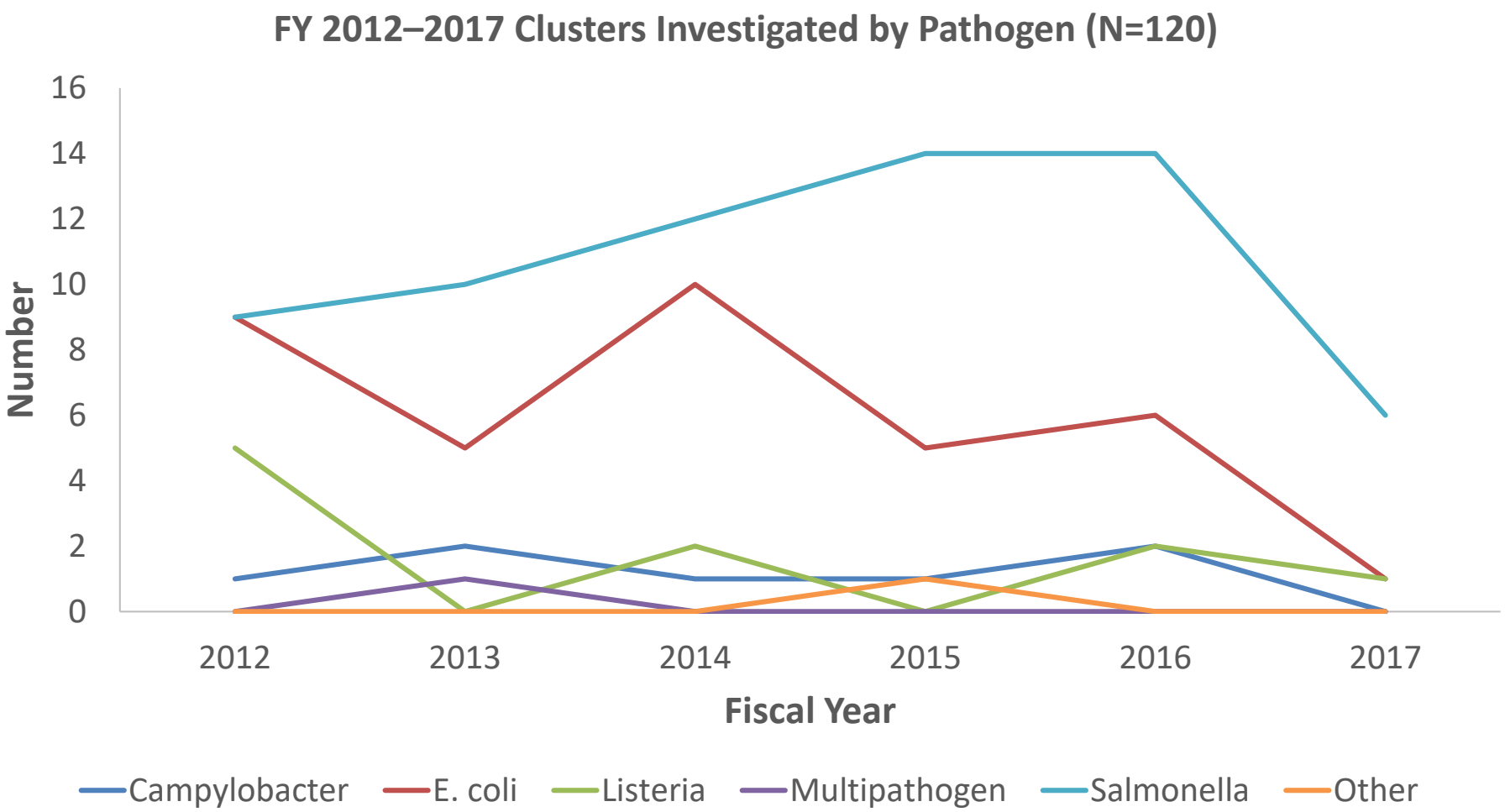
- What is the prevalence of pathogens in chicken livers?
- Do outbreak isolates have special virulence/survival characteristics?
- What processing interventions might be effective?
- Do consumers/chefs know of/prefer undercooking?
- Is there a safe way to cook pâté that is well accepted by chefs and consumers?

Conclusions

- Chicken liver presents a food safety challenge
- Outbreak characteristics help to define prevention targets
- Multi-tiered, collaborative approach needed
- Research critical to gain insights into solving this problem

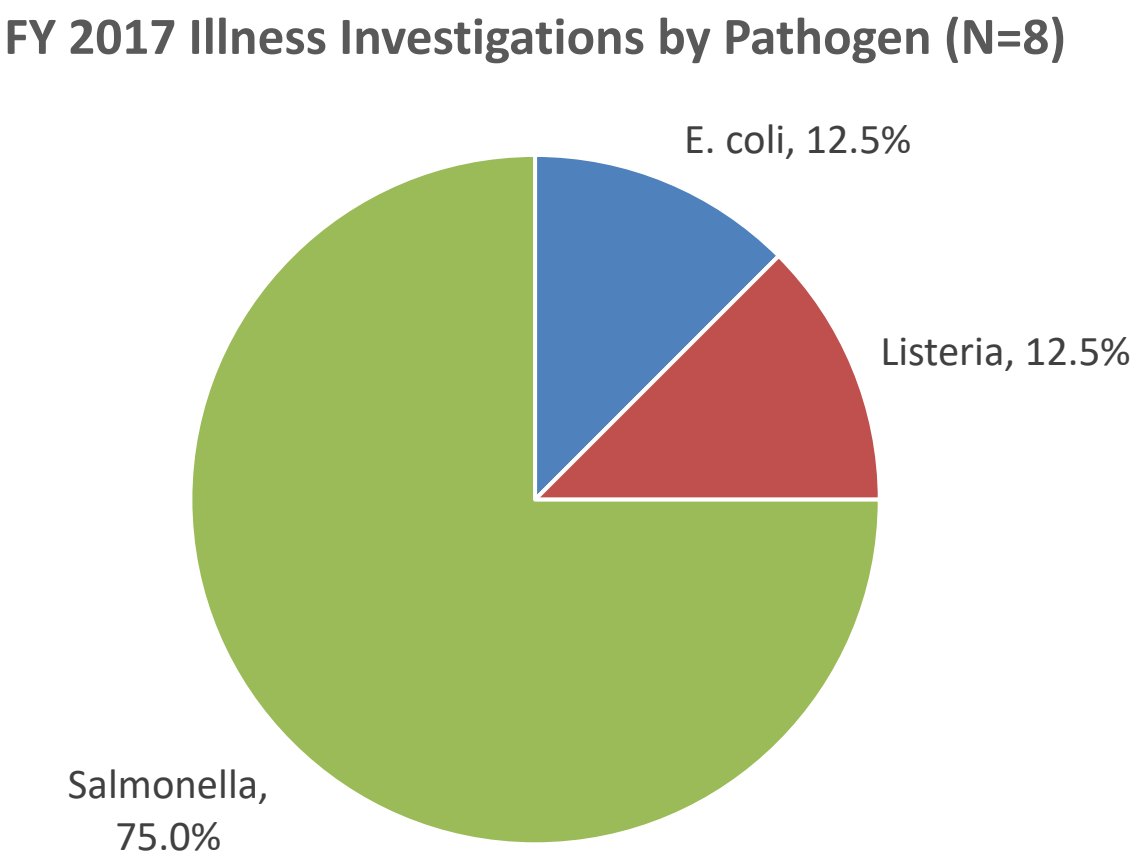
Food Safety and Inspection Service:

FY 2012–2017 Illness Investigations



Food Safety and Inspection Service:

FY 2017 Illness Investigations



Investigations During FY 2018

6 investigations so far:

- *E. coli* (2)
  - O157 (ground beef)
  - O157 & O26 (ground beef)
- *Salmonella* (4)
  - I 4,[5],12:i:- (hog roast)
  - I 4,[5],12:i:-/*C. perfringens* (jambalaya)
  - Reading (ground turkey)
  - Typhimurium (chicken salad)

Thank you!

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