Kissing a Chick Will Make You Sick: A Fowl Case of Salmonella

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The Stars:

Princess Laya, Hen Solo, Chewbwaka, Boba Feather, Kylo Hen, Rey, K2SO

Objectives:

- Understand the prevalence of *Salmonella* associated with exposure to live baby poultry
- Observe the trends in Vermont over time and consider the impact of Culture-Independent Diagnostic Testing (CIDT)
- Understand behaviors that may increase the risk of contracting *Salmonella*
- Identify populations at increased risk and explore potential interventions

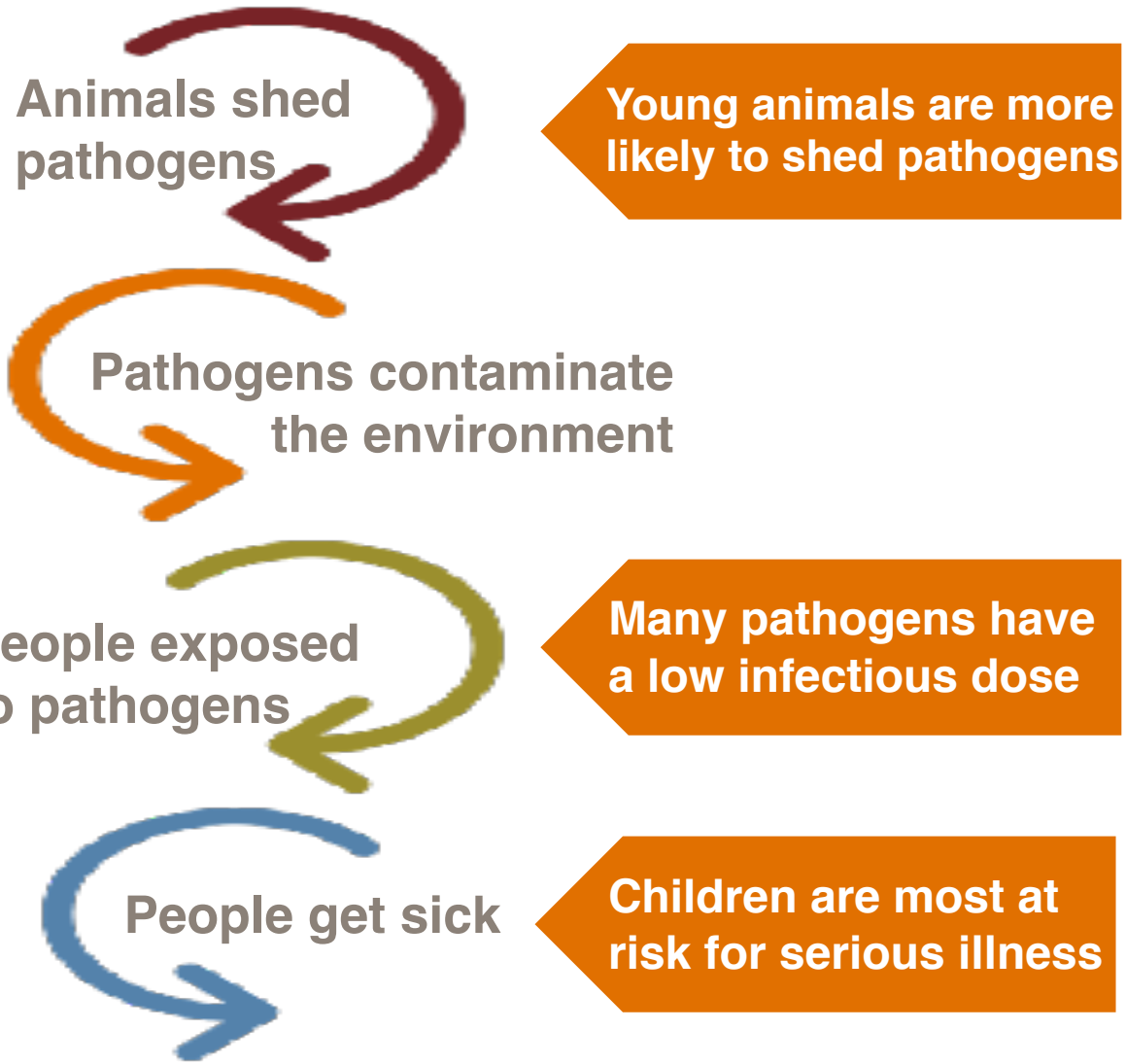
What is *Salmonella*?

- Salmonellosis is an infection caused by *Salmonella* bacteria
- 1.2 million illnesses and 450 deaths in US annually
  - Annual Incidence in US 15.2 illnesses per 100,000 individuals

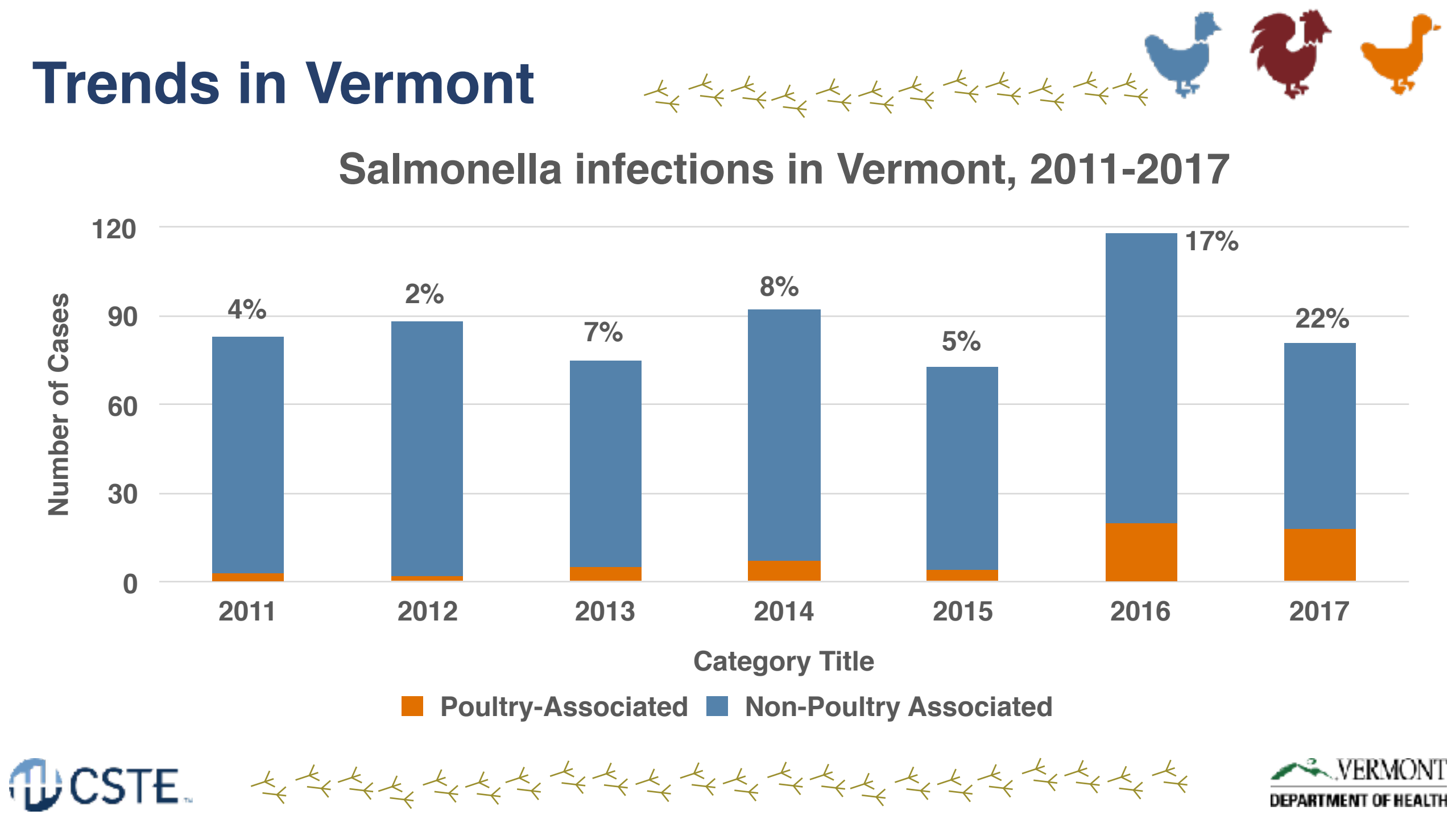
- Signs & Symptoms:
  - Acute gastroenteritis (mild to severe diarrheal illness)
  - Abdominal cramps, fever, nausea, vomiting, headache
- Severe and life-threatening complications (~8%):
  - Extra-intestinal or invasive infections in bloodstream, bone, joint, brain, nervous system, etc.

How is it spread?

- *Salmonella* lives in the intestinal tract of humans and animals
- Eating contaminated food or drinking contaminated water
- Touching infected animals or their environments and not washing your hands afterwards



Trends in Vermont



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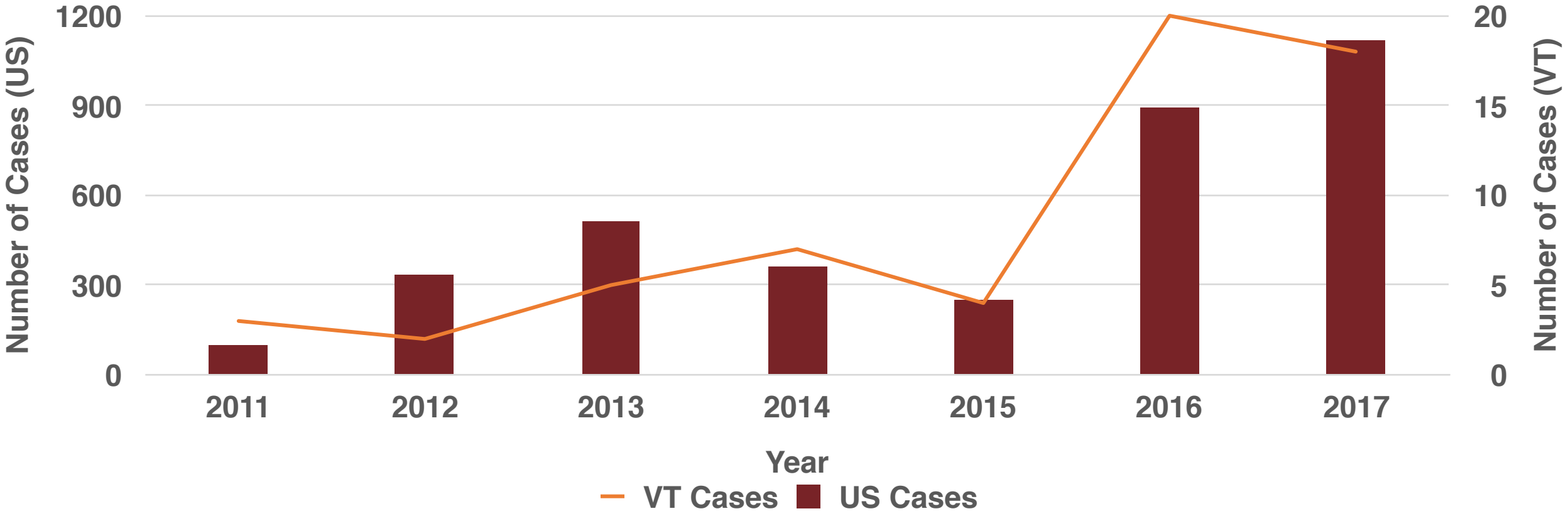
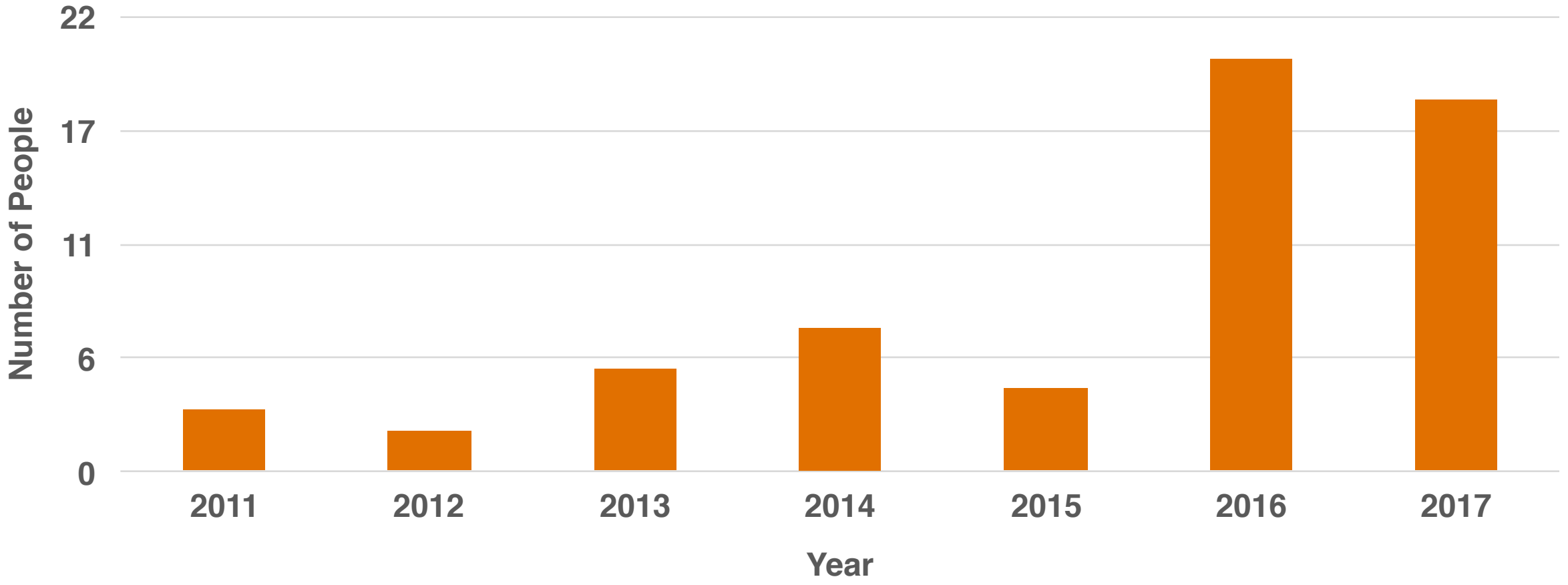
Live Poultry Trends

Salmonella infections associated with exposure to live poultry in the US Compared to Vermont, 2011-2017



Live Poultry Trends

Salmonella infections associated with exposure to live poultry in Vermont, 2011-2017



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Laboratory Testing

80 of 173 *Salmonella* electronic lab results from 2016-2017 were from CIDT (46.75%)

Timeliness:

Specimen collection date

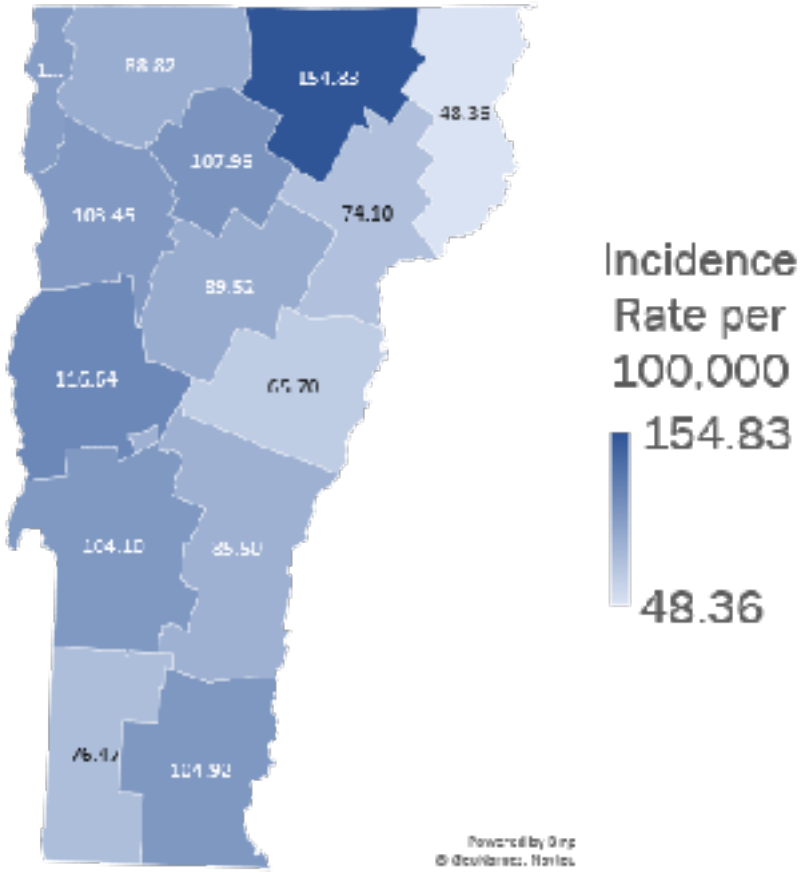
Date received by public health

CIDT (n=79): average 2.33 days (1-4 days)

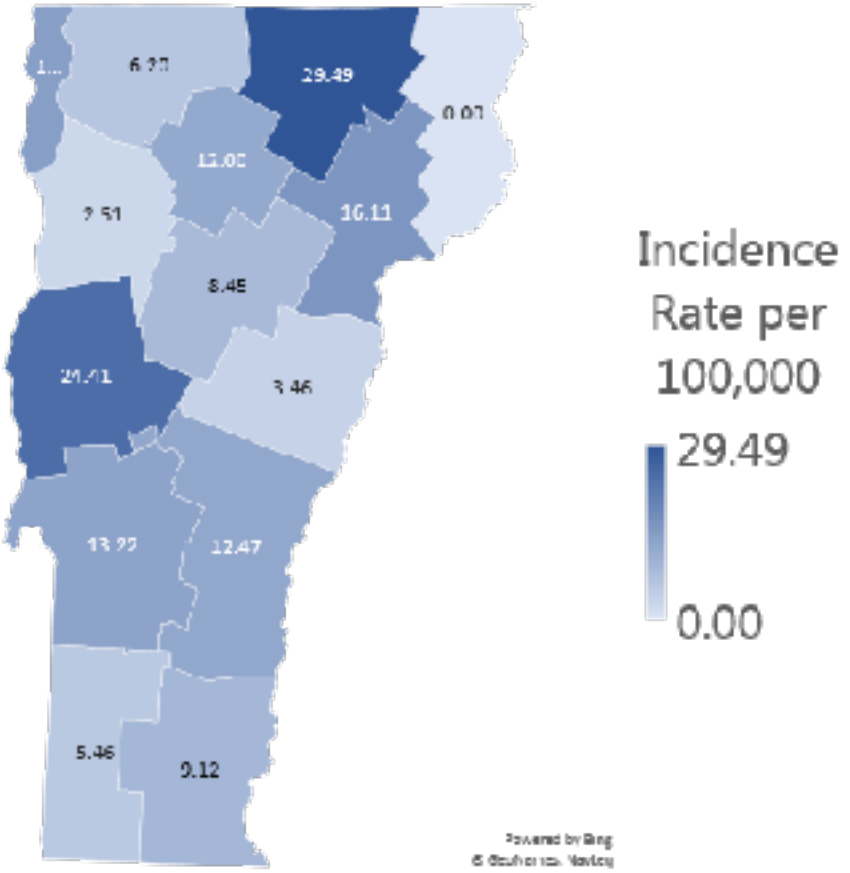
Culture (n=90): average 8.51 days (1-34 days)

Geographic Spread

All Salmonella Cases, 2011-2017



Salmonella Associated with Live Poultry, 2011-2017



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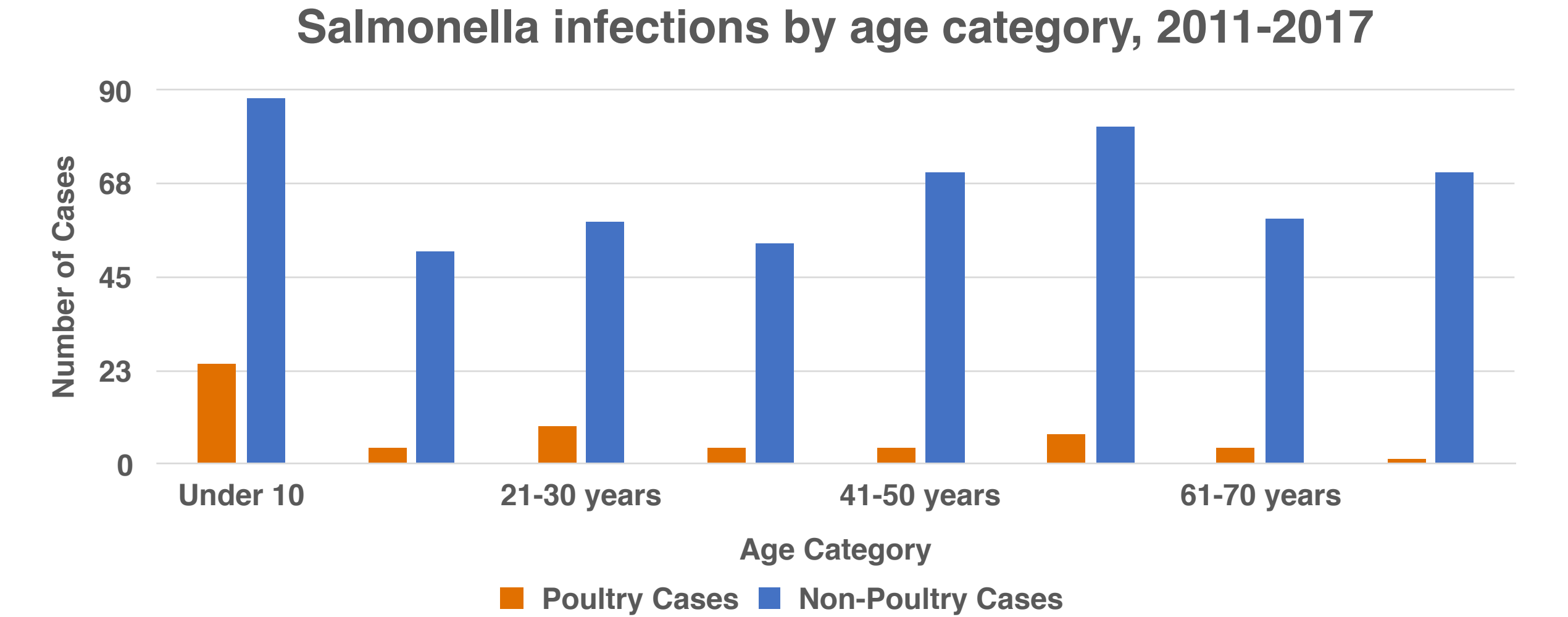
By Age Category



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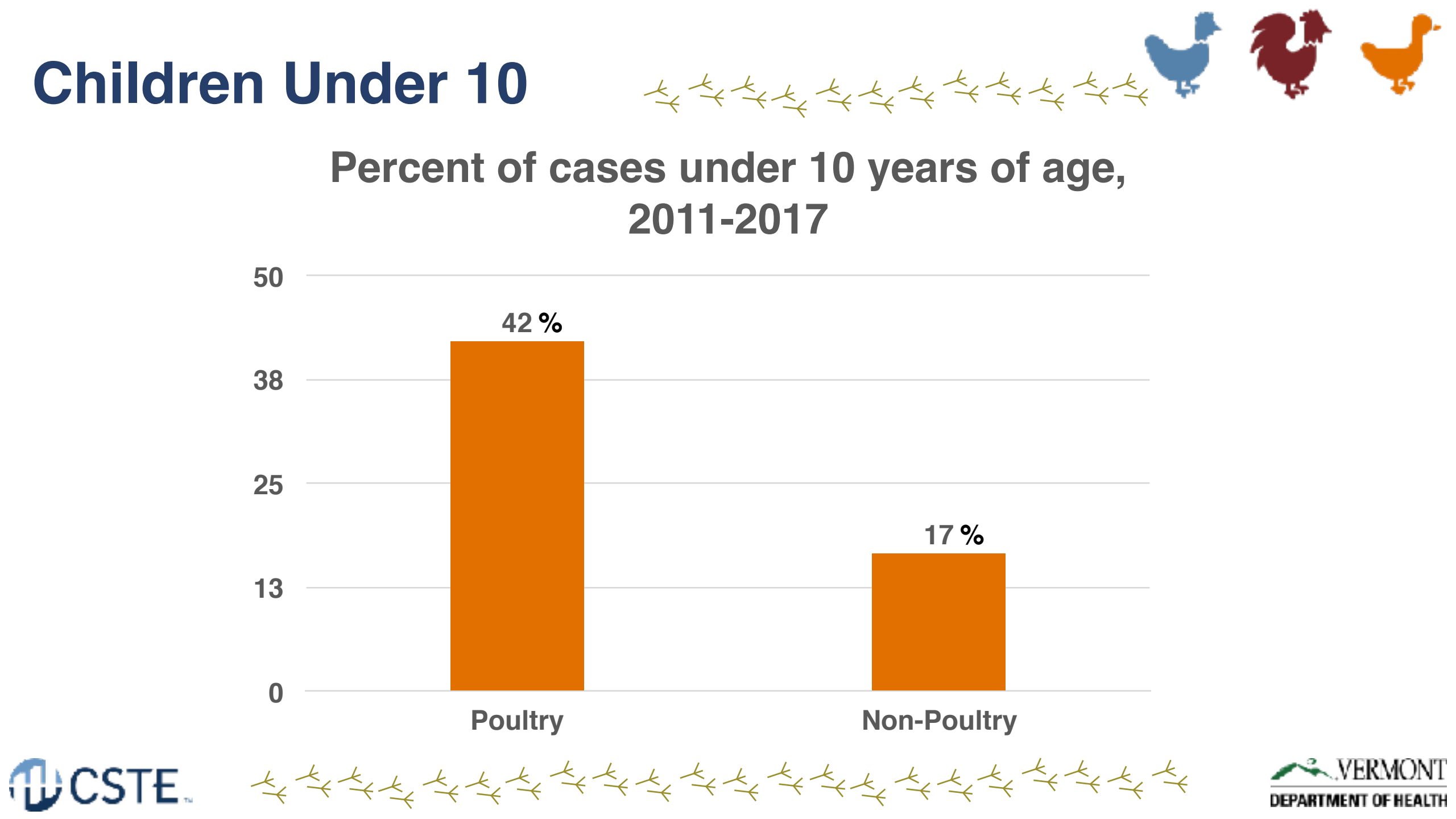
Children Under 10



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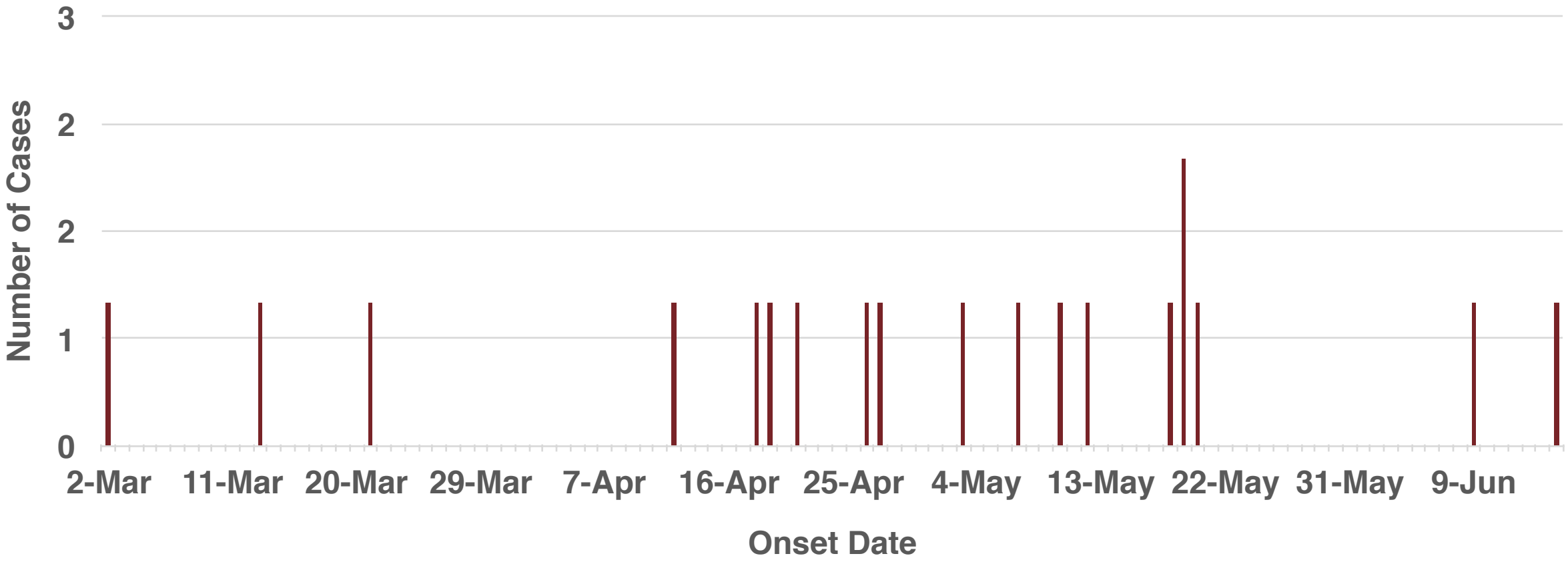
A Closer Look at 2017

- As of 9/30/2017, N=18
- Median illness duration = 10 days (5-14 days)
- 1 hospitalized (6%)
- 14 reported live poultry exposure (78%)
- 11 females (61%)
- 10 Braenderup (56%), 7 Enteritidis (39%),1 Mbandaka (6%)
- 5 were under the age of 10 (28%)
  - Median age at onset = 29 years (2 months-66 years)
- 4 were from Orleans County (22%)
- 2 were occupationally exposed (11%)

2016 Outbreak

Confirmed Salmonella Cases Associated with Live Poultry Exposure Epidemic Curve, Vermont 2016



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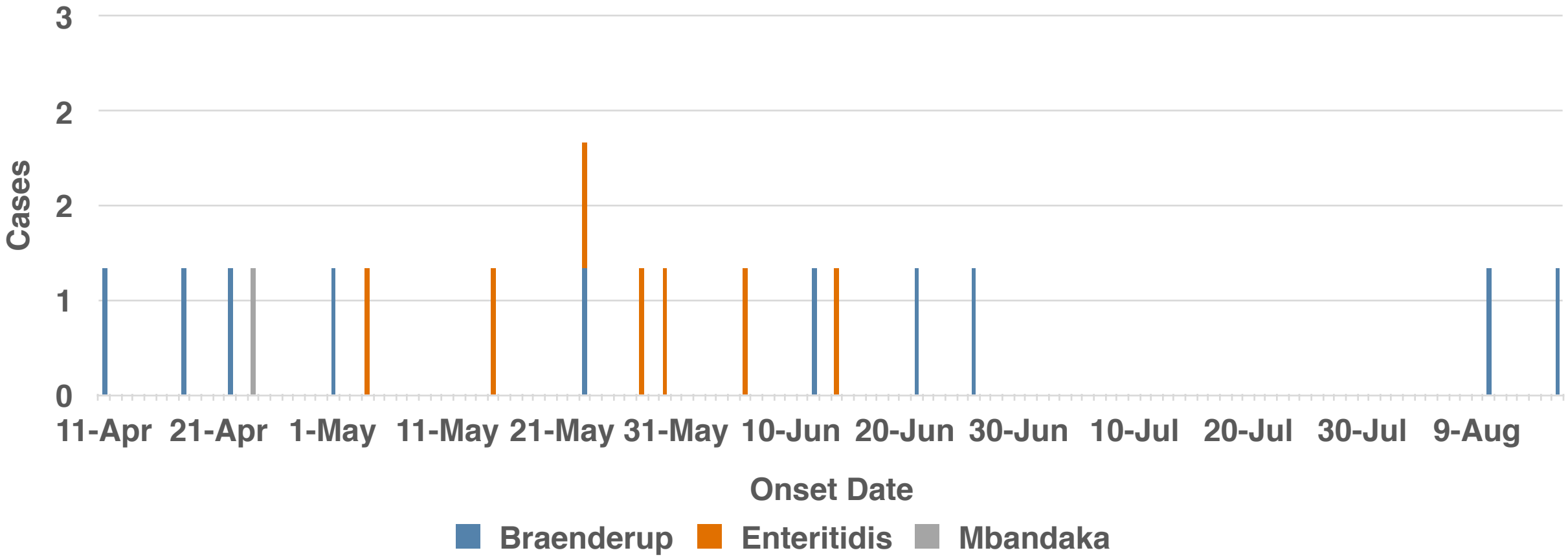
2017 Outbreak

Confirmed Salmonella Cases Associated with Live Poultry Exposure Epidemic Curve, Vermont 2017



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Risk Factors

14 exposed to live poultry

↓

12 owned poultry and were exposed at home (86%)

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8 kept poultry inside their home (67%)

Risk Factors

Risk Factors

- 10/13 (77%) said they were aware of the a connection between poultry contact and Salmonella
- 8/13 (62%) said they "Always (95-100%)" preformed hand hygiene directly after handling live poultry
- 10/13 (77%) touched the poultry and/or cleaned the cages
  - 2 reported only indirect contact
- 11/12 (92%) had baby poultry, purchased this year
- 2/11 (18%) had less than 1 year experience raising poultry

Conclusions

- Live poultry-associated Salmonella outbreaks seem to be on the rise
- Rural/suburban areas in Vermont
- Children under the age of 10 years
- Keeping chicks inside your home

- What can we do?
  - Targeted interventions - education, HH, feed stores
  - Lab testing
  - Climate change

Thank You!

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