Tackling *Cyclospora* in Texas

Tishara Coleman

Texas Rapid Response Team Coordinator

Food Safety Team

Food and Drug Section

Consumer Protection Division

Texas Department of State Health Services

December 03, 2025

&

Samantha Spencer

Epidemiologist II – Foodborne and Waterborne Team

Emerging and Acute Infectious Disease Unit

Office of the Chief State Epidemiologist

Disease Surveillance and Epidemiology

Texas Department of State Health Services

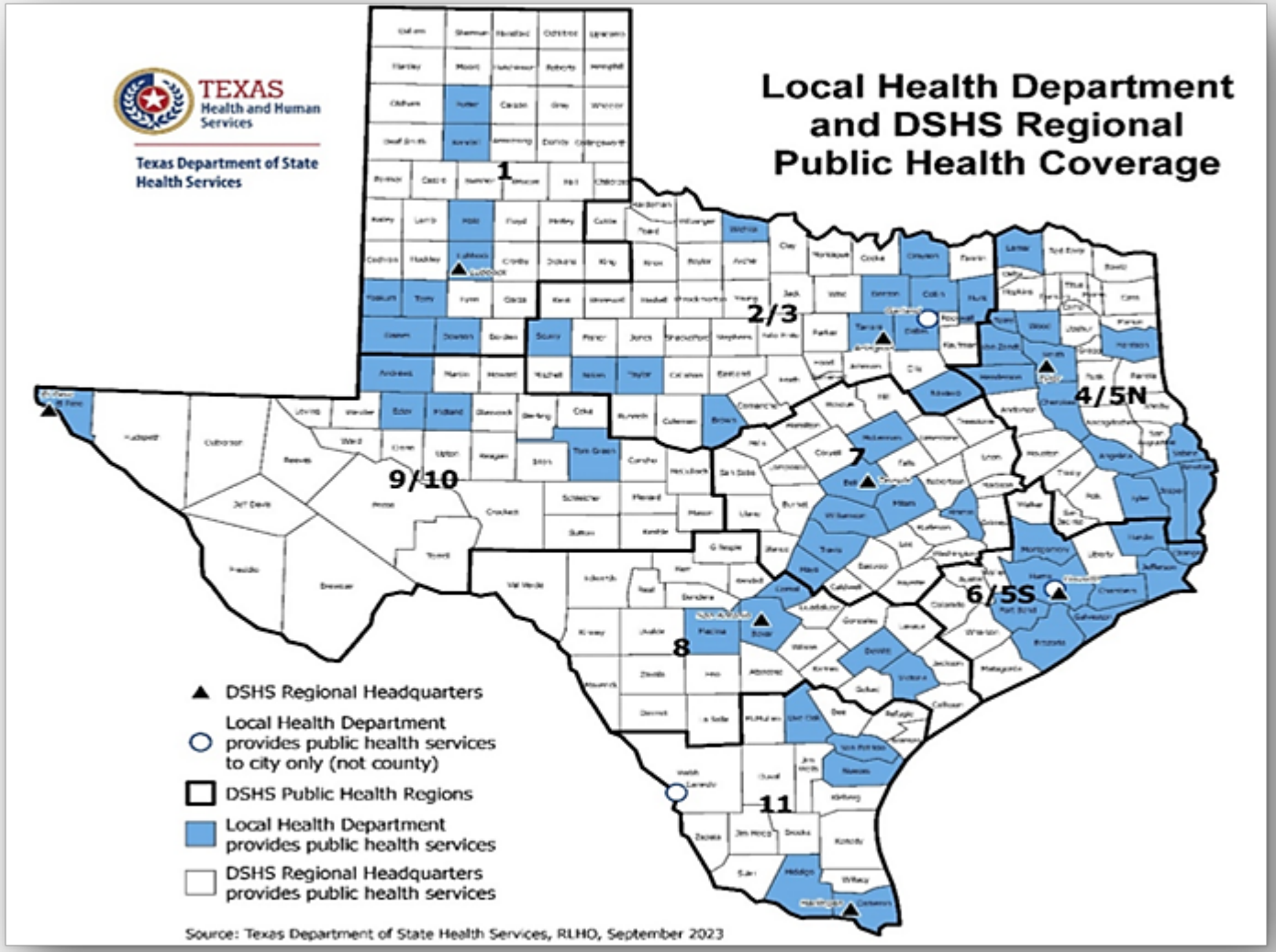
December 03, 2025

Agenda

- What is *Cyclospora* (Cyclo)?
- *Cyclospora* History in Texas
  - Change in distribution of cases across Texas year to Year
- Recent Outbreak
  - 2023 Outbreak
  - Cyclo Traceback
- The future of *Cyclospora* Investigation
  - Wastewater: Exploring Opportunities for the Future

Texas Public Health Regions

Texas Decentralized Public HealthSystem



Available at: https://www.dshs.texas.gov/sites/default/files/regions/Texas-Local-and-DSHS-Regional-Public-Health-Coverage-Map.pdf , accessed on 11/09/2025.

Hierarchy

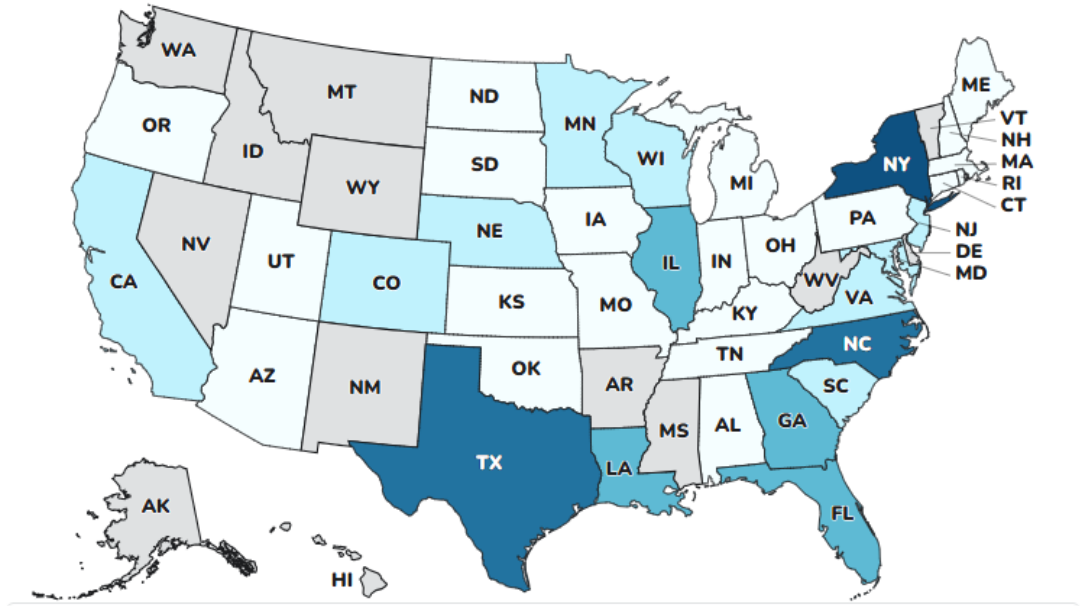
- Local Health Department (LHD)
- Public Health Region (PHR)
- State Central Office (CO) Epidemiologist

What is *Cyclospora*?

What is *Cyclospora*?

Cyclosporiasis Case Count 2023

Outbreak related cases



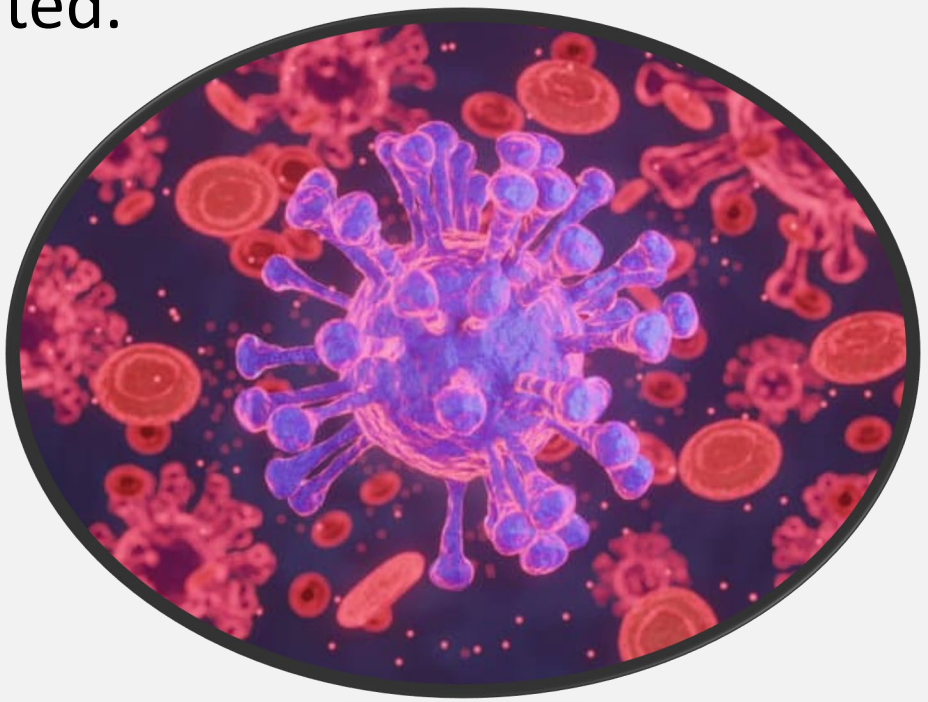
Number of Cases

- 1 to 10
- 11 to 30
- 31 to 80
- 81 to 160
- 161 to 300

Cyclospora cayetanensis

Cyclospora cayetanensis is a parasite that causes cyclosporiasis. Outbreaks of cyclosporiasis that affect North America seasonally. Symptoms may relapse for months if untreated.

- **Onset**
  - 1-14 days after infection, average is 7 days
- **Symptoms**
  - Watery diarrhea, loss of appetite, weight loss, cramping,
  - Bloating, increased gas, nausea, fatigue, vomiting
- **Transmission**
  - Consuming food and/or water contaminated with feces
  - Person-to-person transmission is highly unlikely

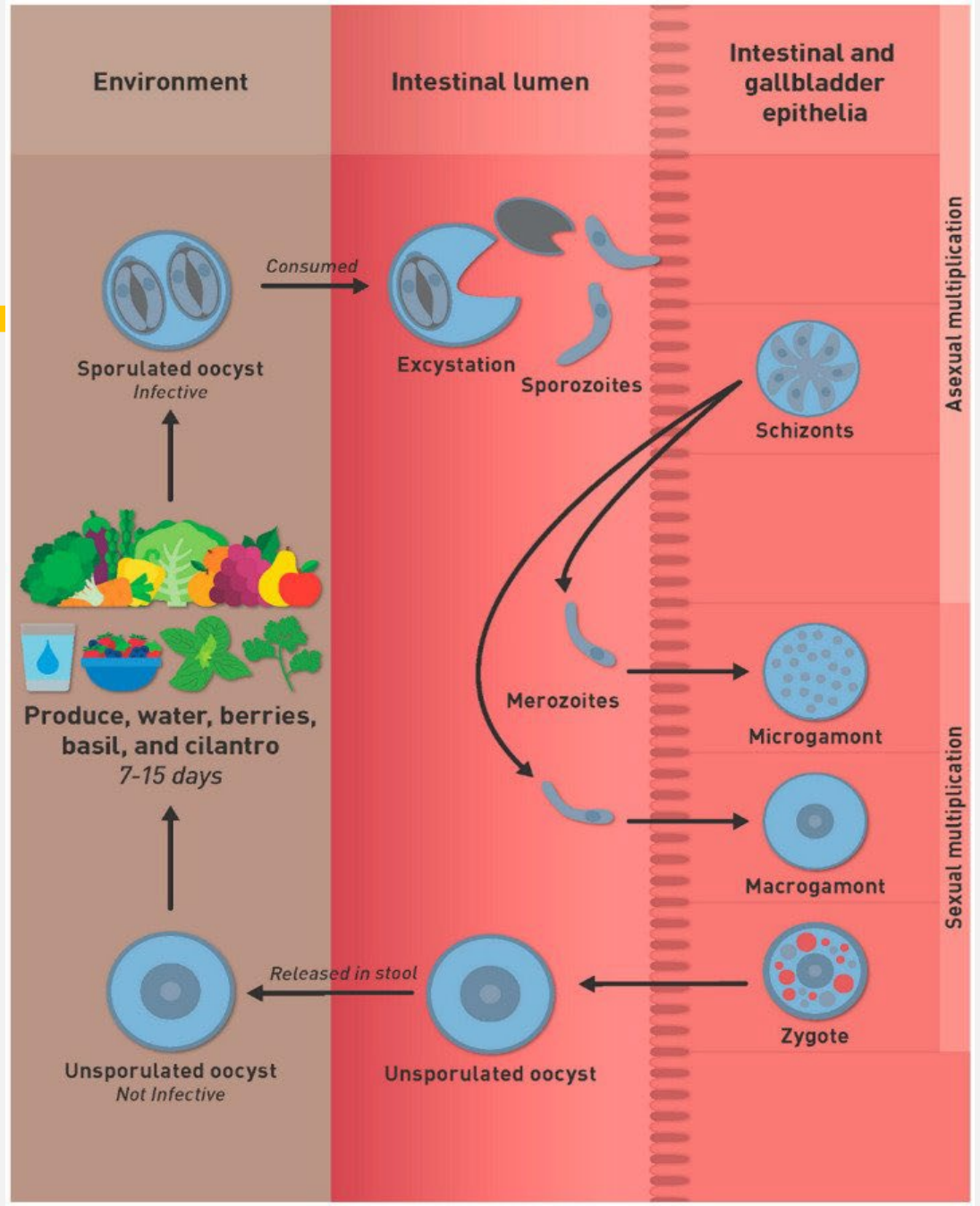


Cyclospora cayetanensis

- **Other Characteristics**
  - Illness onset between **May 01-August 31**
  - Source or farm where produce was grown
  - Complex genome/sexual reproduction
  - Chlorine-resistant/sticky Oocyst
  - Farm conditions leading to contamination:
    - Sewage/lack of restroom facilities
    - Contaminated water
    - Ill workers
- **Historical Outbreaks associated with:**
  - Cilantro
  - Basil
  - Lettuce
  - Berries

Lifecycle

- Person-to-person contact not likely
- Oocysts need to sporulate in the environment to be infectious
  - Warm temperatures
  - 7-15 days
- Very low infectious dose
  - Unknown
  - Between 10-100 oocysts *(*based on Cryptosporidium*)*

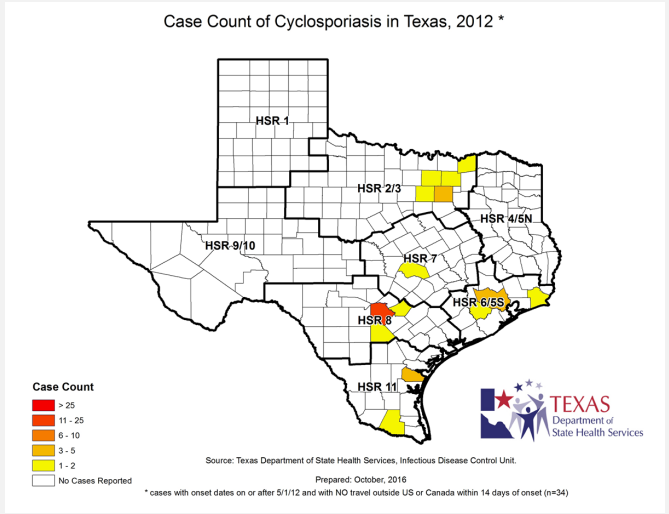


Picture Source: "Life Cycle and Transmission of *Cyclospora cayetanensis*: Knowns and Unknowns". Last access date: 11/21/2025

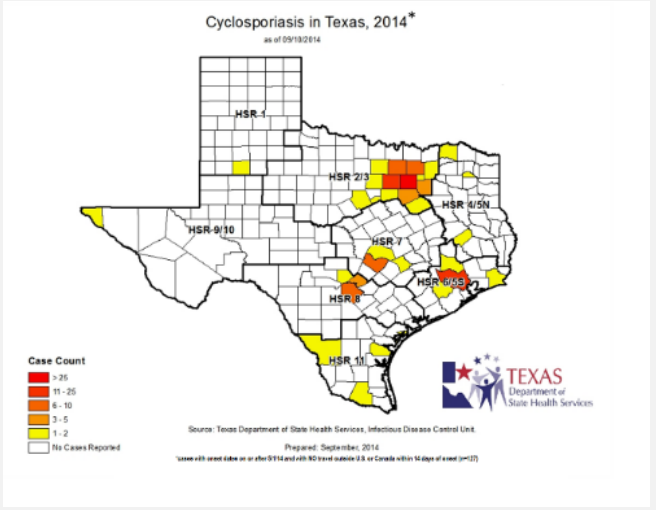
Cyclo History in Texas

Cyclospora
Early Activations and Responses

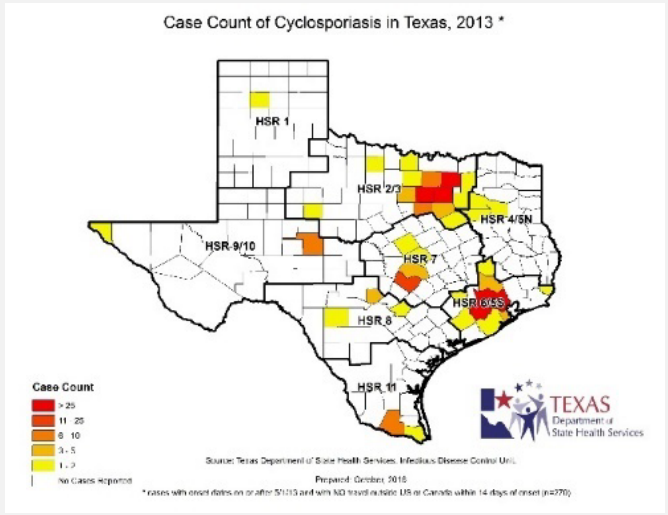
2012 –
44/9-28 cases



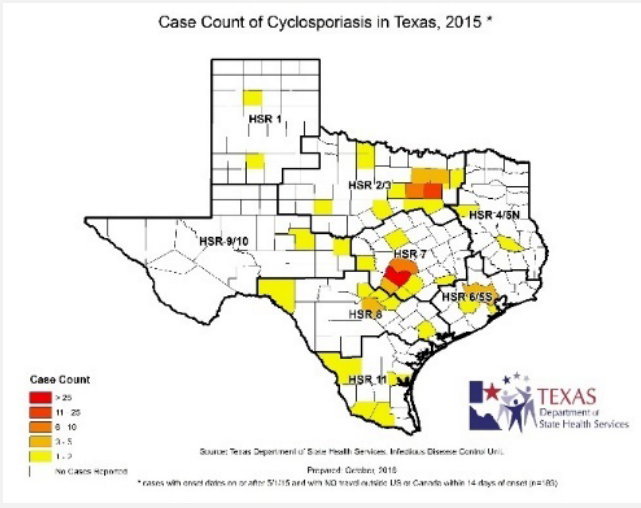
2014 –
200/130 cases



2013 –
351/270 cases



2015 –
316/184 cases



Import Alert 24-23

Import Alert 24-23

SHARE | TWEET | LINKEDIN | PIN IT | EMAIL | PRINT

(Note: This import alert represents the Agency's current guidance to FDA field personnel regarding the manufacturer(s) and/or products(s) at issue. It does not create or confer any rights for or on any person, and does not operate to bind FDA or the public).
Import Alert # 24-23
Published Date: 07/24/2025
Type: DWPE

Import Alert Name:

DETENTION WITHOUT PHYSICAL EXAMINATION OF FRESH CILANTRO FROM THE STATE OF PUEBLA, MEXICO - Seasonal (April 1 - August 31)

Reason for Alert:

Note: The revision of this Import Alert (IA) dated 08/22/2022 updates the reason for alert and the guidance section. Changes to the import alert are bracketed by asterisks (***).

***The Centers for Disease Control and Prevention (CDC), the U.S. Food and Drug Administration (FDA) and state and local public health officials investigated recurring outbreaks (in 2012, 2013,2014 and 2015) of cyclosporiasis in the United States which have been associated with fresh cilantro from the state of Puebla, Mexico.

Cyclospora cayetanensis (C. cayetanensis) is a human gastrointestinal parasite which causes cyclosporiasis. Humans are the only known host for the parasite. The parasite can cause protracted diarrheal illness in both immunocompetent and immunocompromised humans. Cyclosporiasis is associated with eating foods contaminated with human feces. Immature oocysts that are shed in feces require a period of time, usually 1 to 2 weeks, outside the body (exposed to the environment) to mature and become infective. Therefore, transmission of C. cayetanensis from person-to-person is unlikely. Outbreaks of cyclosporiasis are known to be seasonal, typically occurring from April to August in the United States.

Import Alert

Import Alert 24-23

SHARE | TWEET | LINKEDIN | PIN

(Note: This import alert represents the A *(s) and/or products(s) at issue. It does not create or confer any rights for or on a*

Import Alert # 24-23
Published Date: 07/24/2025
Type: DWPE

Import Alert Name:

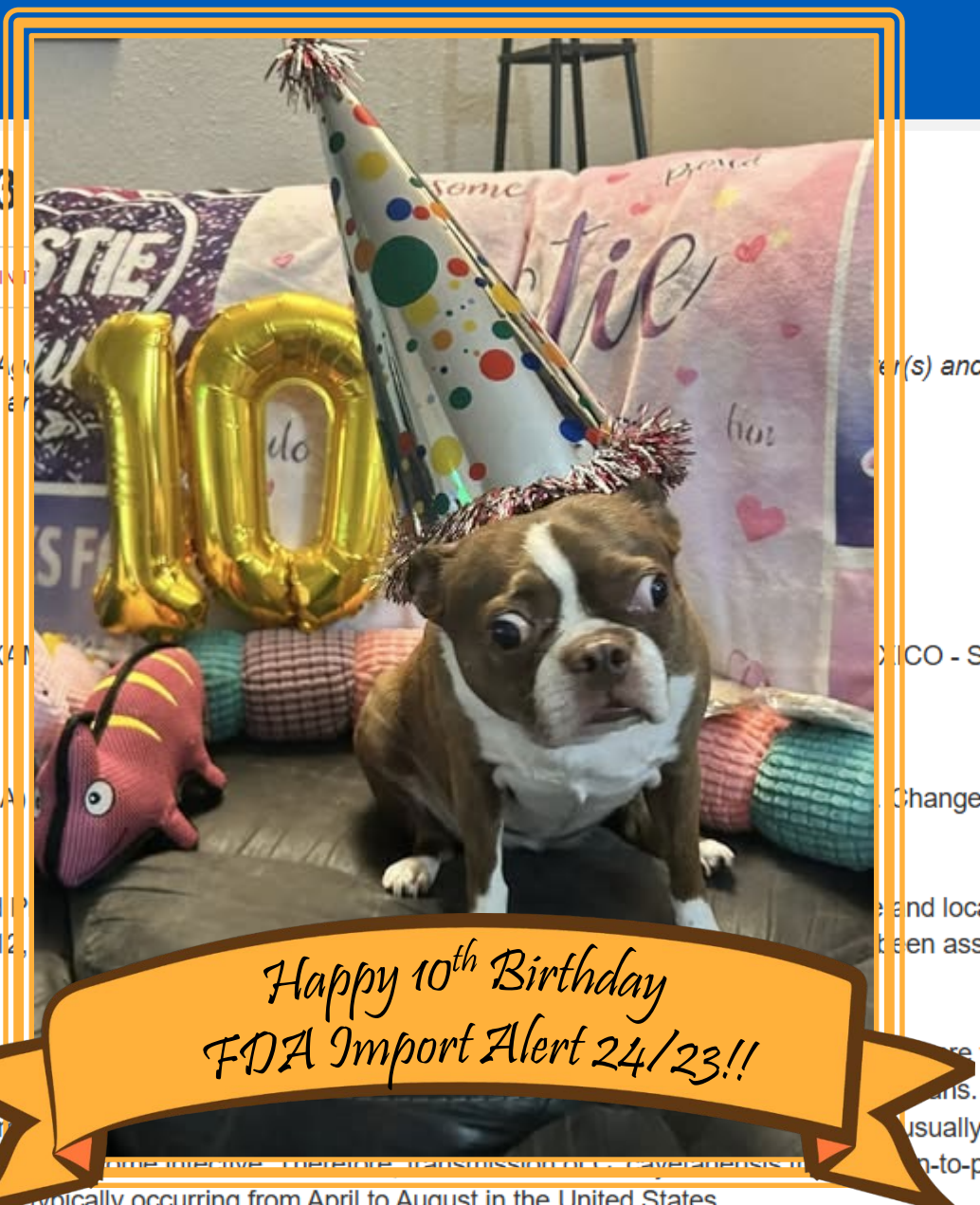
DETENTION WITHOUT PHYSICAL EX *CO - Seasonal (April 1 - August 31)*

Reason for Alert:

Note: The revision of this Import Alert (IA *Changes to the import alert are bracketed by asterisks (***).

***The Centers for Disease Control and *nd local public health officials investigated recurring outbreaks (in 2012, *en associated with fresh cilantro from the state of Puebla, Mexico.

Cyclospora cayetanensis (C. cayetan *re the only known host for the parasite. The parasite can cause p *is. Cyclosporiasis is associated with eating foods contaminated with hu *usually 1 to 2 weeks, outside the body (exposed to the environment) to matur *n-to-person is unlikely. Outbreaks of cyclosporiasis are known to be seas *ypically occurring from April to August in the United States.



Cyclospora
Post Import Alert 24-23

2016 48

- DSHS received **120** reports of cyclosporiasis
- **48** domestically acquired cases

2017 174

- DSHS received **281** reports of cyclosporiasis
- **174** domestically acquired cases

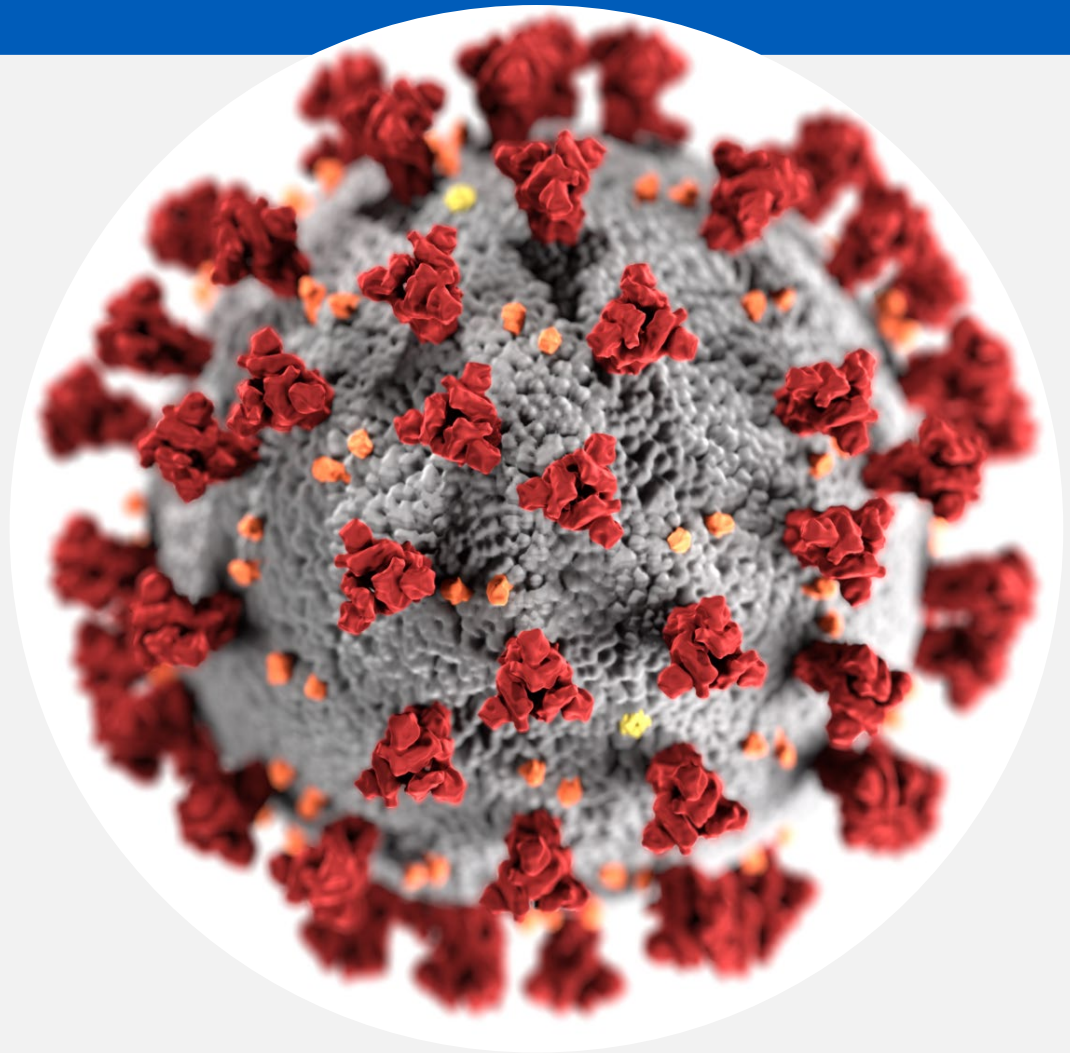
2018 225

- DSHS received **349** reports of cyclosporiasis
- **225** cases domestically acquired cases

2019 600

- DSHS received **1039** reports of cyclosporiasis
- **600** cases domestically acquired cases

COVID-19



Cyclospora COVID-19

2020

- DSHS received **581** reports of cyclosporiasis
- **236** domestically acquired cases

2021

- DSHS received **312** reports of cyclosporiasis
- **141** domestically acquired cases

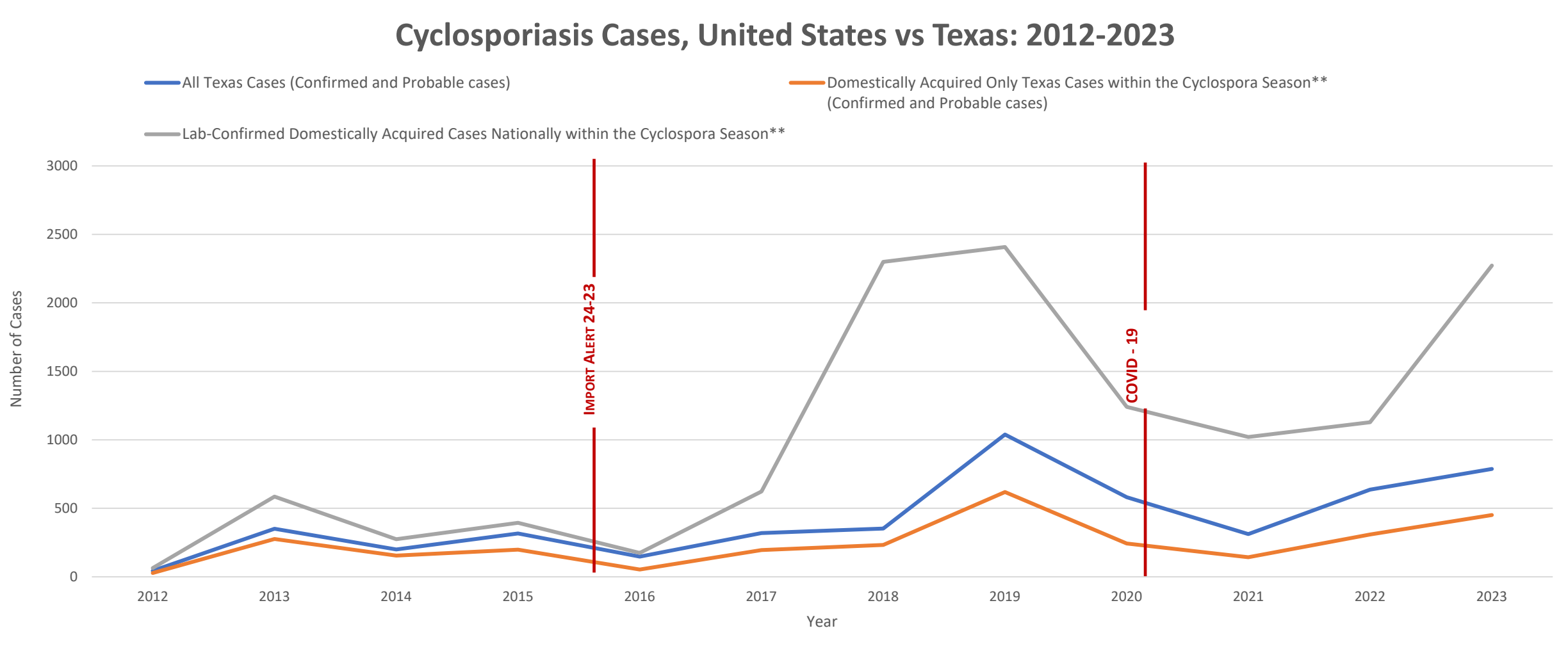
2022

- DSHS received **636** reports of cyclosporiasis
- **290** cases domestically acquired cases

2023

- DSHS received **788** reports of cyclosporiasis
- **386** cases domestically acquired cases

Cyclosporiasis Cases, United States vs Texas 2012-2023*

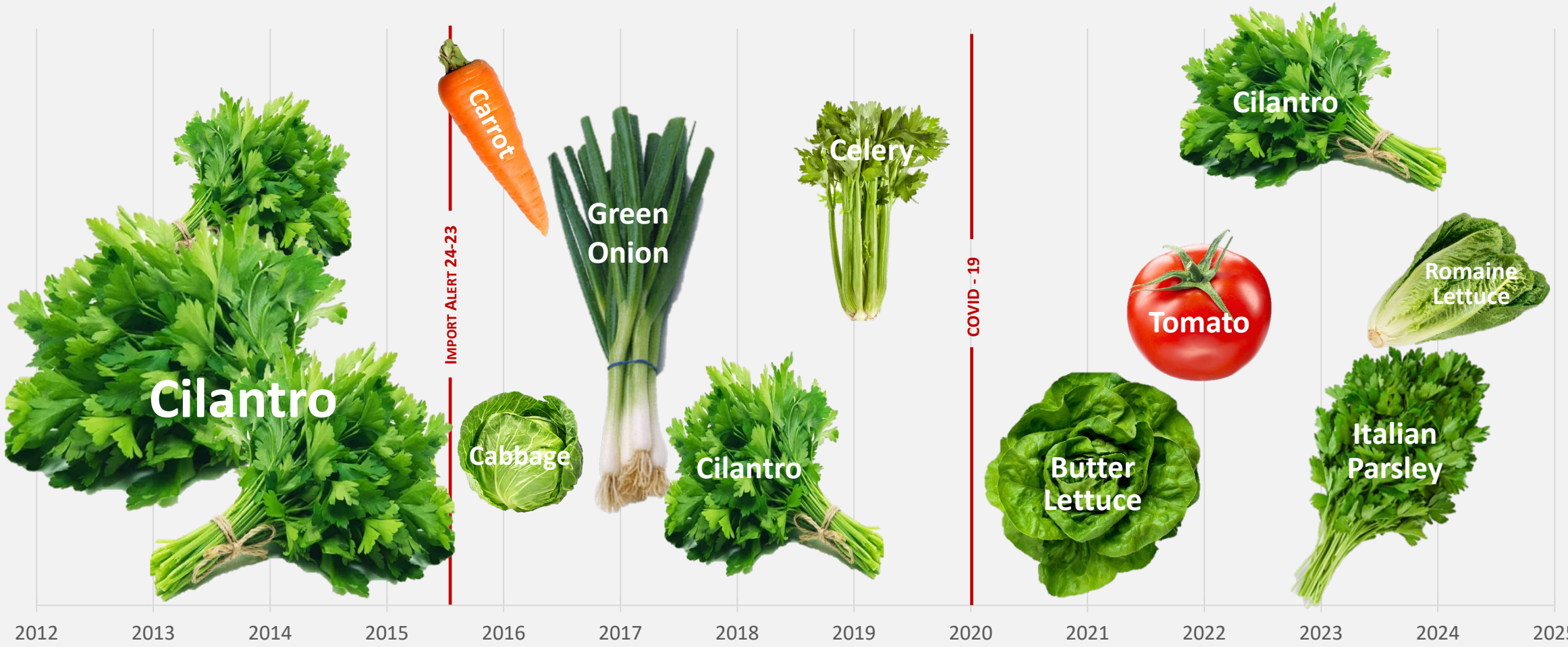


*Data source: EAIDU NBS. Last access date: 11/04/2025

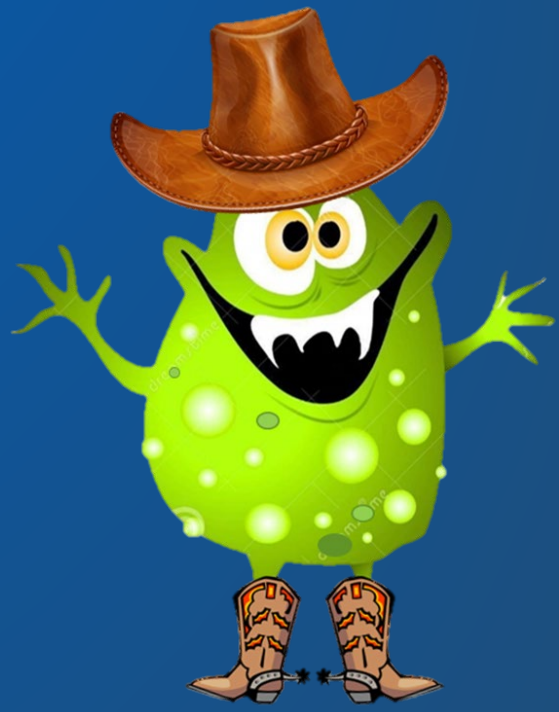
**Cases with no international travel (excluding Canada) between May 01st-Augist 31st. The 2023 *Cyclospora* season started a month early and ran from April 01st-August 31st.

Cyclospora Suspect Vehicles

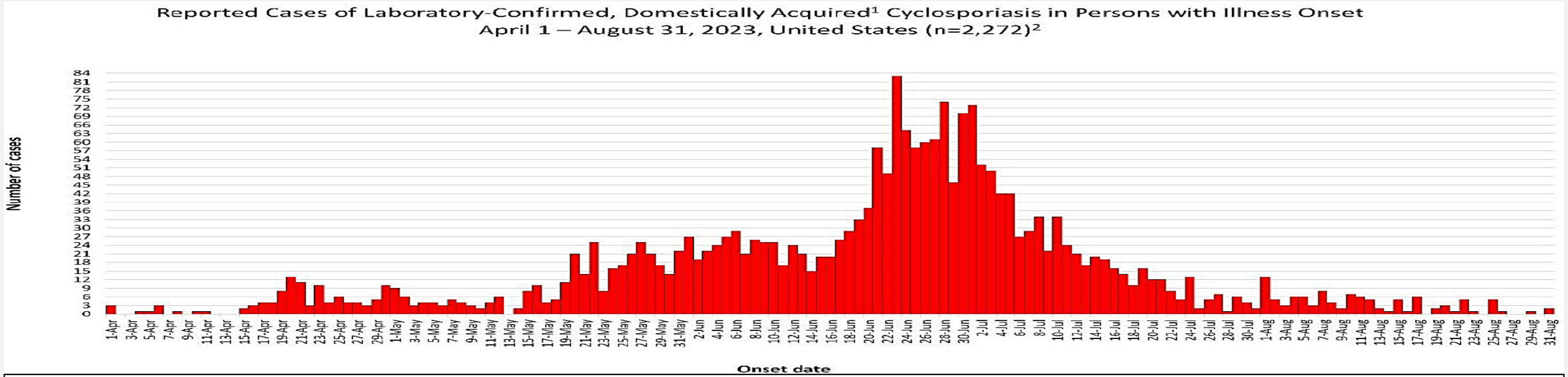
Over the Years

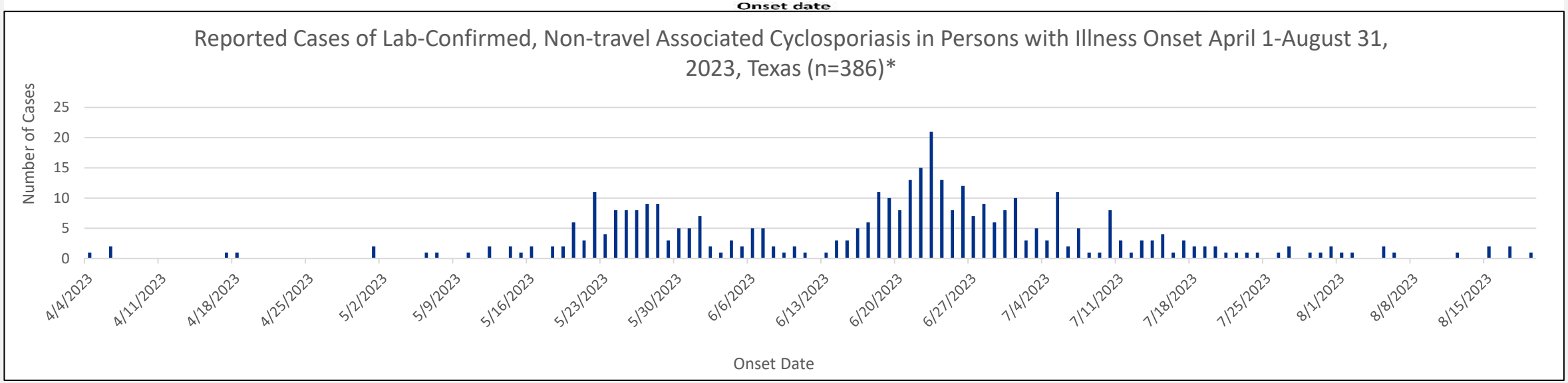


Recent Outbreak
-2023 Outbreak



Cyclosporiasis Lab-Confirmed cases, National vs Texas, 2023





*Data source: EAIDU NBS. Last access date: 11/04/2025

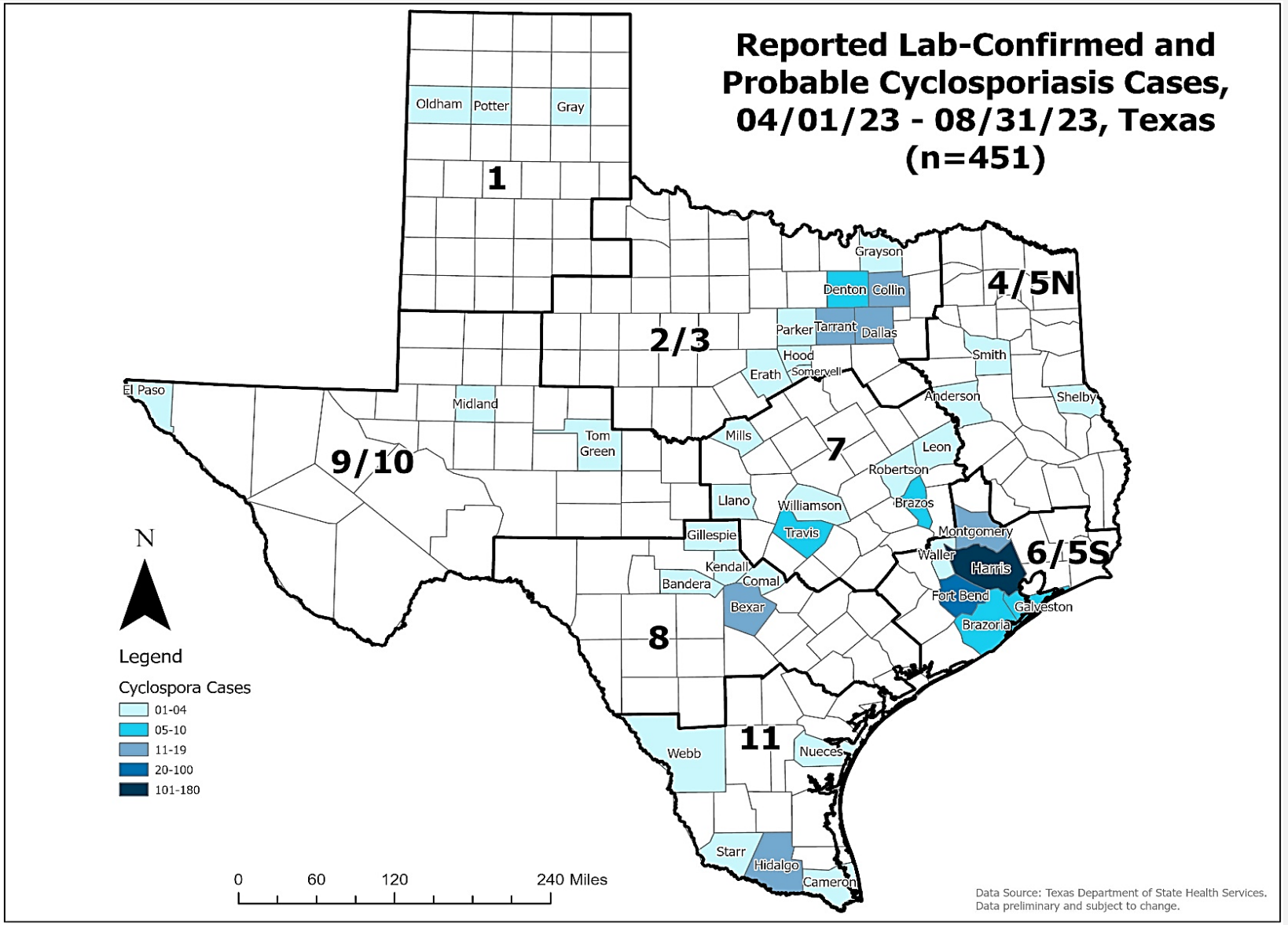
Cyclosporiasis, 2023*

- **Within the CDC's Seasonal Definition****
  - Nationally: 2,272 cases
  - Texas: **386** cases

- **TX 2023 Cases: 788**
- Within the seasonal time frame: 766 cases
  - 451 Cases: No International Travel Reported
    - (**386** lab-confirmed, 65 probable/epidemiologically linked)
  - 175: Lost to Follow Up (LTFU)
  - 140: International Travel Associated
- Outside of the seasonal time frame: 22 cases
  - 01/01/2023 - 03/31/2023: 13
  - 09/01/2023 – 12/31/2023 : 9

*Data source: EAIDU NBS. Last access date: 11/04/2025
**Lab-confirmed cases with no international travel (excluding Canada) between 04/01/2024 - 08/31/2024

Cyclosporiasis Seasonal Outbreak 2023, Texas*



PHR	Cases
1	1%
2/3	13%
4/5N	1%
6/5S	67%
7	6%
8	4%
9/10	2%
11	6%

*Data source: EAIDU NBS. Last access date: 11/04/2025

2023 *Cyclospora* Outbreaks and Clusters in Texas*

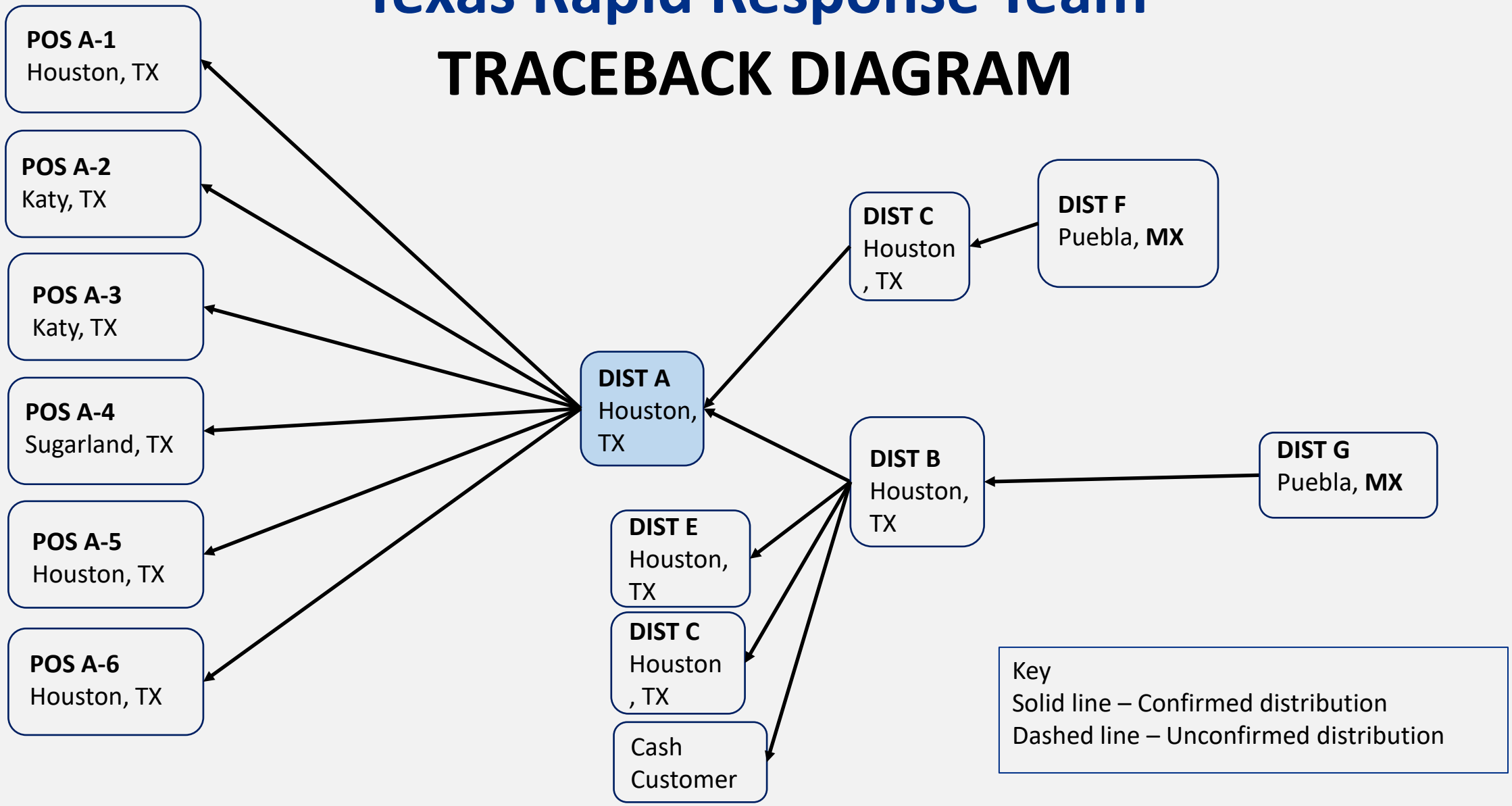
Outbreak/ Cluster	Outbreak Name	PHR	County	Suspect Produce	Confirmed Case	Probable Cases
Outbreak	Mediterranean A	6/5S	Harris	**Tabbouleh: Italian Parsley**	80	51
Outbreak	Grocery Store 1	6/5S	Multiple	**Cilantro or Strawberry**	111	1
Outbreak	Mediterranean B	6/5S	Harris	Unknown	5	0
Outbreak	Mediterranean C	6/5S	Harris	Unknown	7	0
Outbreak	Church Event	6/5S	Harris	Unknown	2	1
Outbreak	BBQ Event	2/3	Collin	**Broccoli Salad**	2	5
Cluster	Grocery Store 2	11	Hidalgo	Unknown	3	0
Cluster	Grocery Store 3	11	Hidalgo	Unknown	3	0

*Data source: EAIDU NBS. Last access date: 11/04/2025

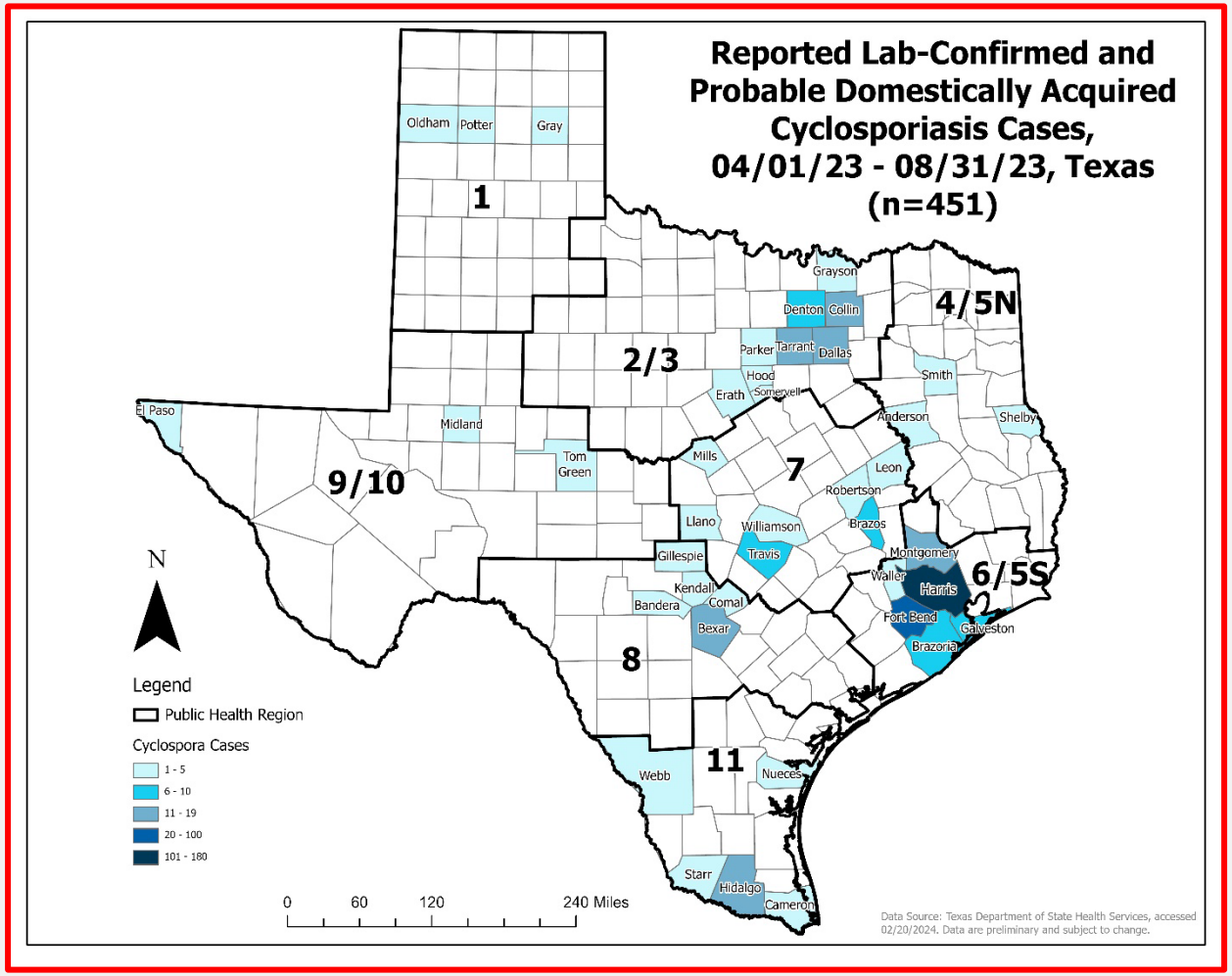
Cyclospora cayetanensis/Italian Parsley 2023

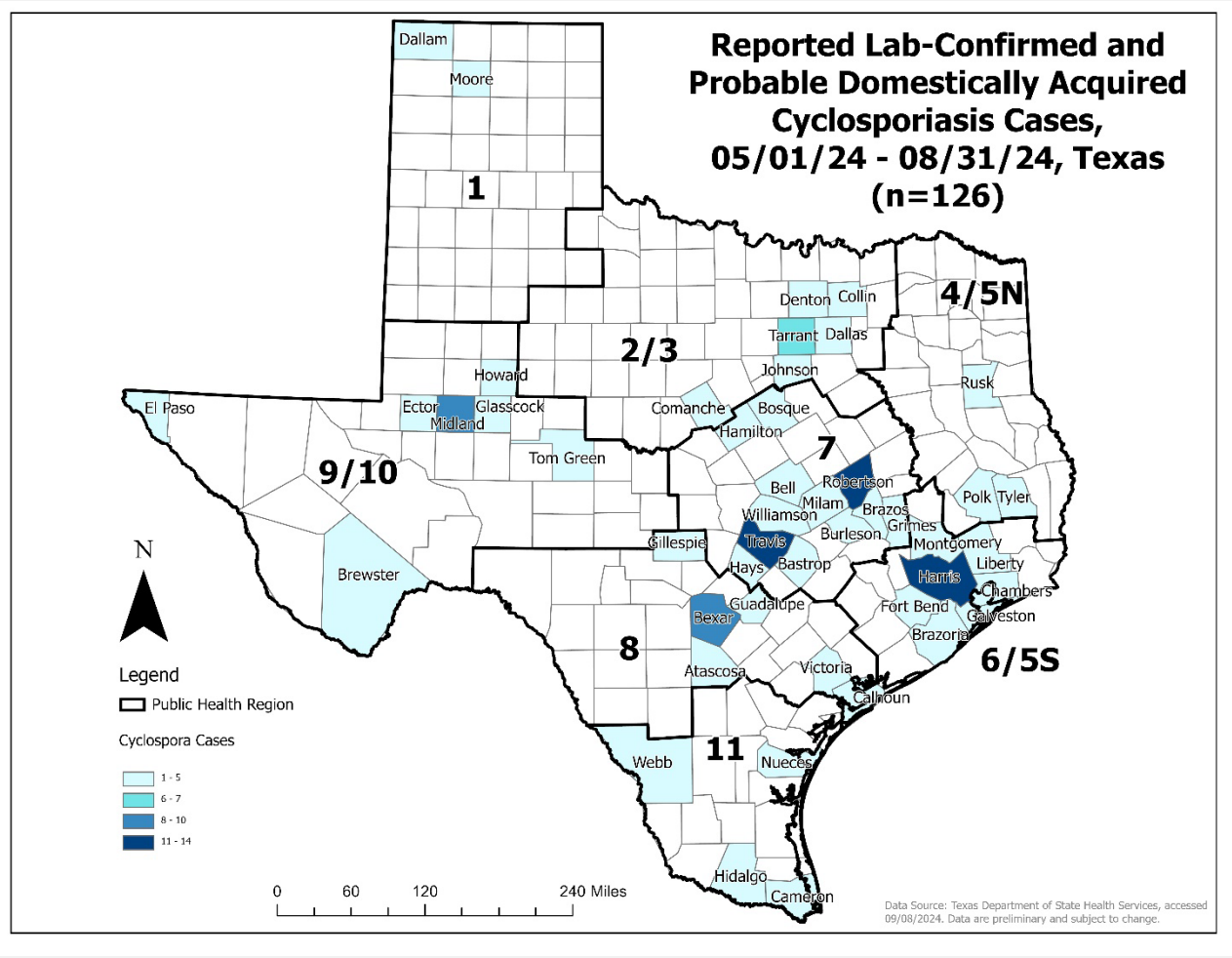
Texas Rapid Response Team

TRACEBACK DIAGRAM



Birds Eye View of Domestically Acquired Cyclosporiasis in Texas: 2023-2024 *,**





*Data is provisional and subject to change.
**Data source: EAIDU NBS. Last access date: 11/04/2025

2023 Investigation Takeaways…

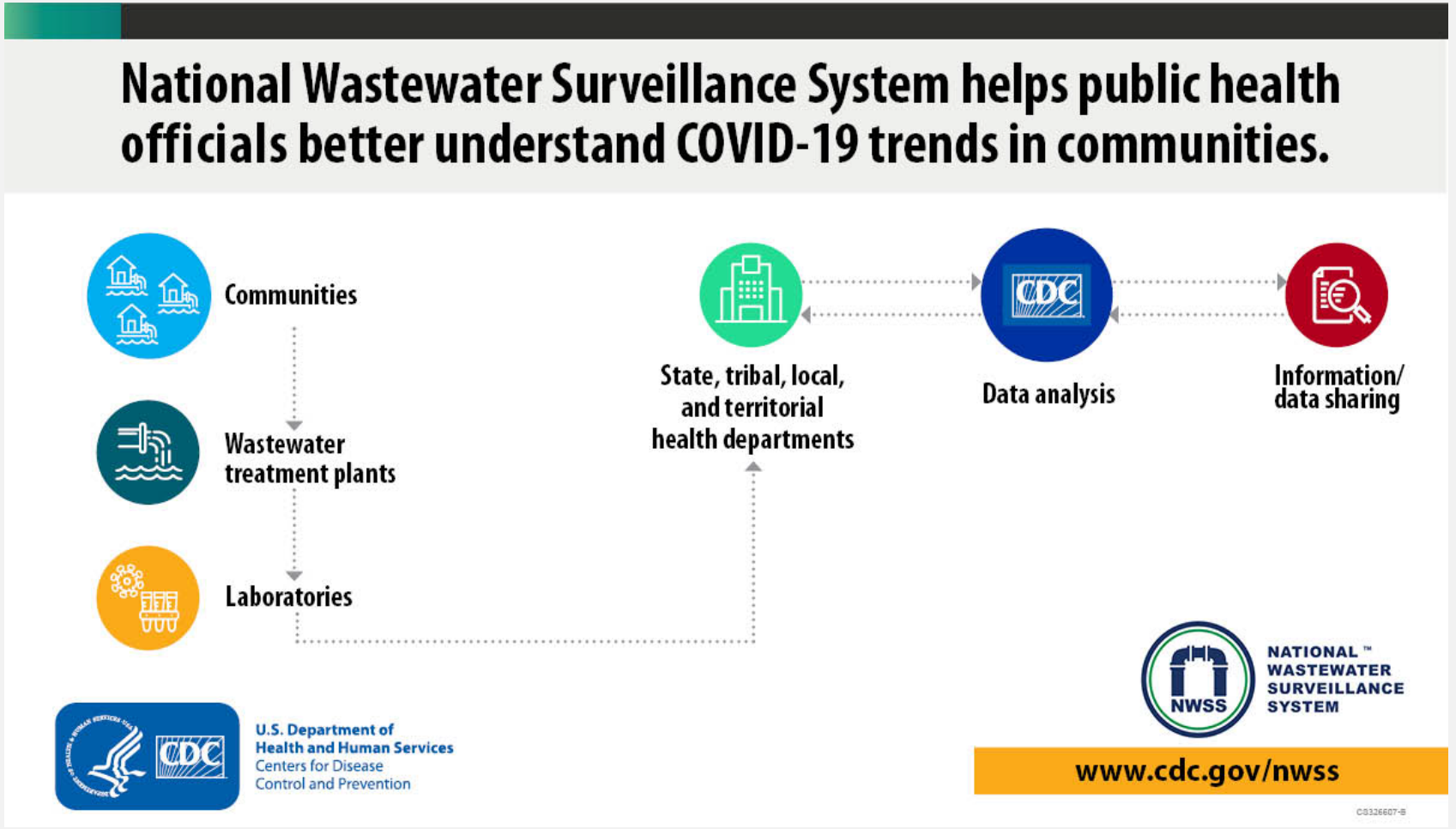
- Unlicensed vendors
  - Many were discovered in Southern and Southeastern Texas
  - Maybe contributed to lower amount of 2024 cases??
- Local Health Departments did food testing
  - Italian parsley was positive for *Cyclospora*
  - 1st time in a Texas Cyclospora investigation
- Point-of-Service A (POS A) changed produce suppliers immediately after notification of outbreak
  - No more cases were associated with POS A after vendor change
  - POS A had been involved in previous Cyclo outbreaks
- Invite to Inaugural International Cyclospora Conference

The future of *Cyclospora* Investigation

Wastewater: Exploring Opportunities for the Future

What is Wastewater?

Wastewater testing can detect organisms spreading within a community **before** people show symptoms or go to their doctor.



Picture Source: "Wastewater Surveillance Data Reporting and Analytics" by the CDC. Last access date: 11/02/2025

Could *Cyclospora* Wastewater Data be Beneficial?

- Early warning system for the Local Health Department and Texas Department of Agriculture
- Identify contaminated produce early in the *Cyclospora* season*
- Work with the FDA to conduct random produce testing for *Cyclospora*

Picture Source: Microsoft Stock Image. Last accessed 11/05/2025

* Cyclospora season runs from May 1st-August 31st

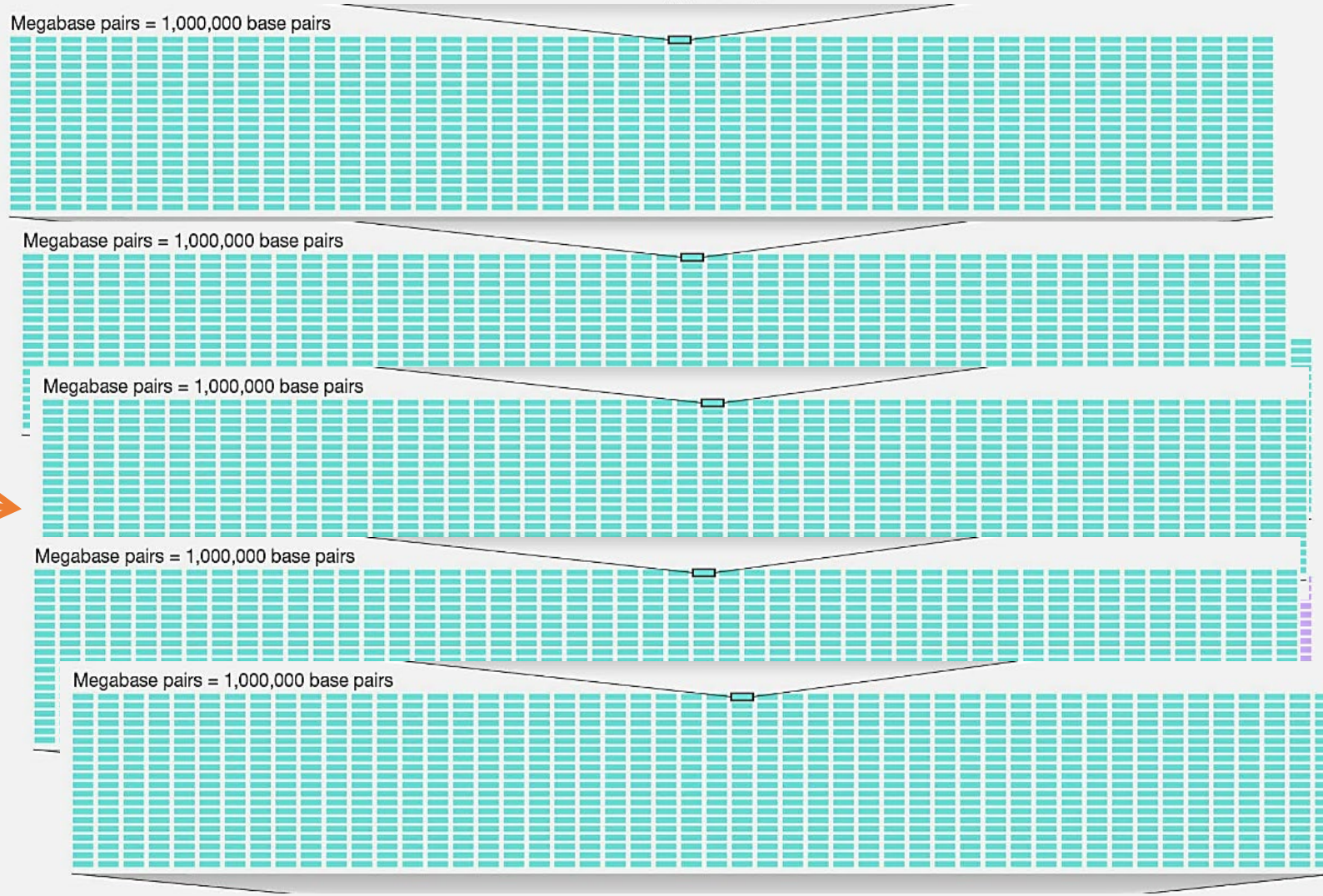
Can *Cyclospora* be Detected in Wastewater?

Genome Sizes

- *Norovirus* (Virus):
  7.5 kilobases (7,500 bases)*

- *Salmonella* (Bacteria):
  4.6-5.1 megabase pairs**

- *Cyclospora* (Parasite):
  44 megabase pairs ***



Can *Cyclospora* be Detected in Wastewater?

Genome Sizes

- *Norovirus* (Virus):
7.5 kilobases (7,500 bases)*

- *Salmonella* (Bacteria):
4.6-5.1 megabase pairs**

- *Cyclospora* (Parasite):
44 megabase pairs ***

Picture Source: "Kilobase (kb)": by National Human Genome Research Institute. Last accessed date: 11/02/2025

*Data source: "Structure and Genotypes of Noroviruses". Last accessed date: 11/05/2025
**Data source: "Salmonella serotype assignment by sequencing analysis of intergenic regions of ribosomal RNA operons". Last accessed date: 11/05/2025
***Data source: "Draft Hybrid Genome Assembly of a Canadian Cyclospora cayetanensis Isolate". Last accessed date: 11/05/2025

Cyclospora Wastewater Project

FDA, EPA, and Texas Cyclospora Wastewater Collaboration

- FDA Wastewater Testing Methods
- Effluent Wastewater
  - 6-200 oocyst spike tests
- Influent Wastewater Update
  - Pending method corrections
  - Pending 6-200 oocyst spike tests

Picture Source: Microsoft Stock Image. Last accessed 11/05/2025

Questions?

Tishara Coleman
Texas Rapid Response Team Coordinator
tishara.coleman@dshs.texas.gov
TRRT@dshs.texas.gov

Samantha Spencer
Texas Rapid Response Team
Epidemiologist
Samantha.spencer@dshs.texas.gov