



Department of State Health Services  
Health Service Region 1  
Epidemiology Response Team

**EPI Tōme**  
Newsletter

ISSUE

**15**

July—Sept.  
2014

**“Please be kind...report on time!”**

## TIME TO THINK ABOUT *CYCLOSPORA*

Summer produce has made its way to grocery store shelves and farmers market stands, the temperature is heating up, and family vacations and summer BBQs are in full swing. These conditions make a perfect recipe for gastrointestinal illness to sprout up. Many pathogens—viruses, bacteria, and parasites—are frequently sources of these infections. Though often under-recognized intestinal illness, cyclosporiasis has made headlines in the last few years for contaminating food and causing hundreds to fall ill.

### EPIDEMIOLOGY

Recently, there has been a marked increase in the number of cyclosporiasis cases reported in Texas. On July 18<sup>th</sup>, Texas Department of State Health Services (TX DSHS), Health Service Region 1 (HSR1) sent out a health advisory reporting an increase in the number of *Cyclospora* infections in Texas. At that time, 34 cases total were reported to the state. As of August 4, 2014, there have been 136 cases reported to the state. In comparison, the number of cyclosporiasis cases reported in Texas ranged from 0-14 per year from 2001 through 2011. Last year in 2013, an increase in cyclosporiasis cases was noted nationally and in Texas there were 351 reported cases of cyclosporiasis, more than any other state.

### DISEASE

Cyclosporiasis is caused by the parasite *Cyclospora cayentanensis*. Cyclosporiasis is an intestinal illness characterized by watery diarrhea, loss of appetite, weight loss, cramping, bloating, increased gas, nausea, fatigue, vomiting, and low-grade fever. Some people who are infected do not develop symptoms. People living or traveling in tropical or subtropical regions of the world may be at increased risk for infection because cyclosporiasis is endemic in those countries. The incubation period is approximately 7 days with a range of 2 to 14 days. Cyclosporiasis is not spread person-to-person. It is usually

caused by consuming food or water contaminated with feces that contains *Cyclospora*. In the past, cyclosporiasis infections have been caused by the consumption of imported fresh produce, including cilantro, pre-packaged salad mix, raspberries, basil, snow peas and mesclun lettuce.

### DIAGNOSIS

Diagnosis of cyclosporiasis requires submission of stool specimens and requires special lab tests that are not routinely done. The Texas Department of State Health Services is encouraging healthcare providers to test patients for *Cyclospora* if they have diarrheal illness lasting more than a few days or diarrhea accompanied by severe ano-



Fresh imported raspberries, snow peas, basil, and lettuce have been implicated in cyclosporiasis outbreaks in the U.S.

Continued on page 4

Table 1: Select reportable conditions, including confirmed, probable, and suspect cases (as applicable) in DSHS HSR 1, including all public health jurisdictions: Six month comparison (January through June for the time period January 1, 2012 through June 30, 2014.) Data source: Texas NEDSS Database. Data extracted: 08/07/2014. Time period based on Event Date. These counts are generated by DSHS HSRI. 2014 data is preliminary and subject to change.

Condition	January 2012 through June 2012						January 2013 through June 2013						January 2014 through June 2014						2012 Total	2013 Total	2014 Total					
	Jan	Feb	Mar	Apr	May	Jun	Jan	Feb	Mar	Apr	May	Jun	Jan	Feb	Mar	Apr	May	Jun				6 mo. Total	6 mo. Total	6 mo. Total		
	6 mo. Total						6 mo. Total						6 mo. Total													
Amebiasis			1						1						1				2					2	1	1
Aseptic (viral) meningitis	1	1	1	3	4	1			1						1									0	1	23
Bacterial and other meningitis			1																					0		5
Botulism, foodborne																								0		
Campylobacteriosis	12	7	6	15	12	28	10	3	11	7	8	18	5	4	7	2	6	11	57	35	35	11	188	178		
Creutzfeldt-Jakob Disease																			0	0	0		1			
Cryptosporidiosis						1	2	1											3	14	14	29	29	8		
Cyclosporiasis												1							1	1	1	1	1			
Encephalitis, West Nile																			0	0	0		28	2		
Haemophilus influenzae, invasive																			0	0	0		1			
Hantavirus pulmonary syndrome																			0	0	0					
Hemolytic uremic synd.postdiarrheal																			0	0	0					
Hepatitis A, acute	1					1													0	0	0		1	1		
Hepatitis B Viral Infection, Perinatal																			0	0	0	3	5	2		
Hepatitis B, acute				1		1	1	1	1	1									4	0	0		4	2		
Hepatitis C, acute				1															0	0	0			1		
Influenza-associated pediatric mortality																			0	0	0			1		
Legionellosis																			0	0	0			1		
Listeriosis																			0	0	0			1		
Lyme disease						1													0	0	0	1	1	1		
Malaria				1					1		1								2	2	1	1	4	1		
Mumps																			0	0	0		1			
Neisseria meningitidis, invasive									1										1	0	0		2	1		
Pertussis	4				1	3	3	2	2	2	7	10	17	15	4	4	7	18	65	162	21					
Salmonellosis	9	11	8	18	20	13	5	6	13	17	8	12	5	6	6	10	10	19	56	150	172					
Shiga toxin-producing Escherichia coli	2		2	1	1				1			1	3	2	2	2		3	12	9	16					
Shigellosis	14	10	15	20	7	15	1	5	3	10		1	1				5	1	8	31	178					
Spotted Fever Rickettsiosis																			0	0	0			1		
Streptococcus pneumoniae, invasive	14	9	18	8	4	4	15	7	7	10	4	4	10	12	13	9	15	3	62	74	90					
Streptococcus, invasive Group A				2	2	3	4	3	8	1	2	1	3	3	5		1	2	14	29	19					
Streptococcus, invasive Group B	3	1	3	6	2	6	4	5	4	1	7	3	3	3	5	3	6	5	25	45	51					
Varicella (Chickenpox)	8	7	6	4	9	2	4	2	6	4	3	1	2	2	2	4	2	2	12	47	61					
Vibrio vulnificus infection				1															0	0	0			1		
Vibriosis, other or unspecified																			0	0	0			2		
West Nile Fever																			0	0	0		32	1		
Yersiniosis																			0	0	0		1			

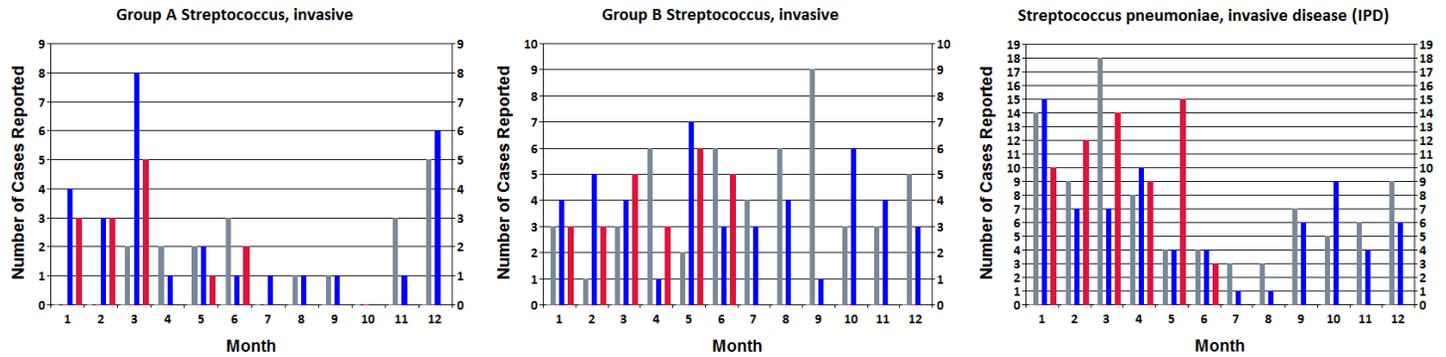
Note: West Nile Encephalitis and West Nile fever were not officially reported in the NEDSS database during 2012.

Chart 1: Select reportable conditions, including confirmed, probable, and suspect cases (as applicable) in DSHS HSR 1, including all public health jurisdictions, for the period January 01, 2012 through June 30, 2014 by Month/Year. Time period is based on Event Date.

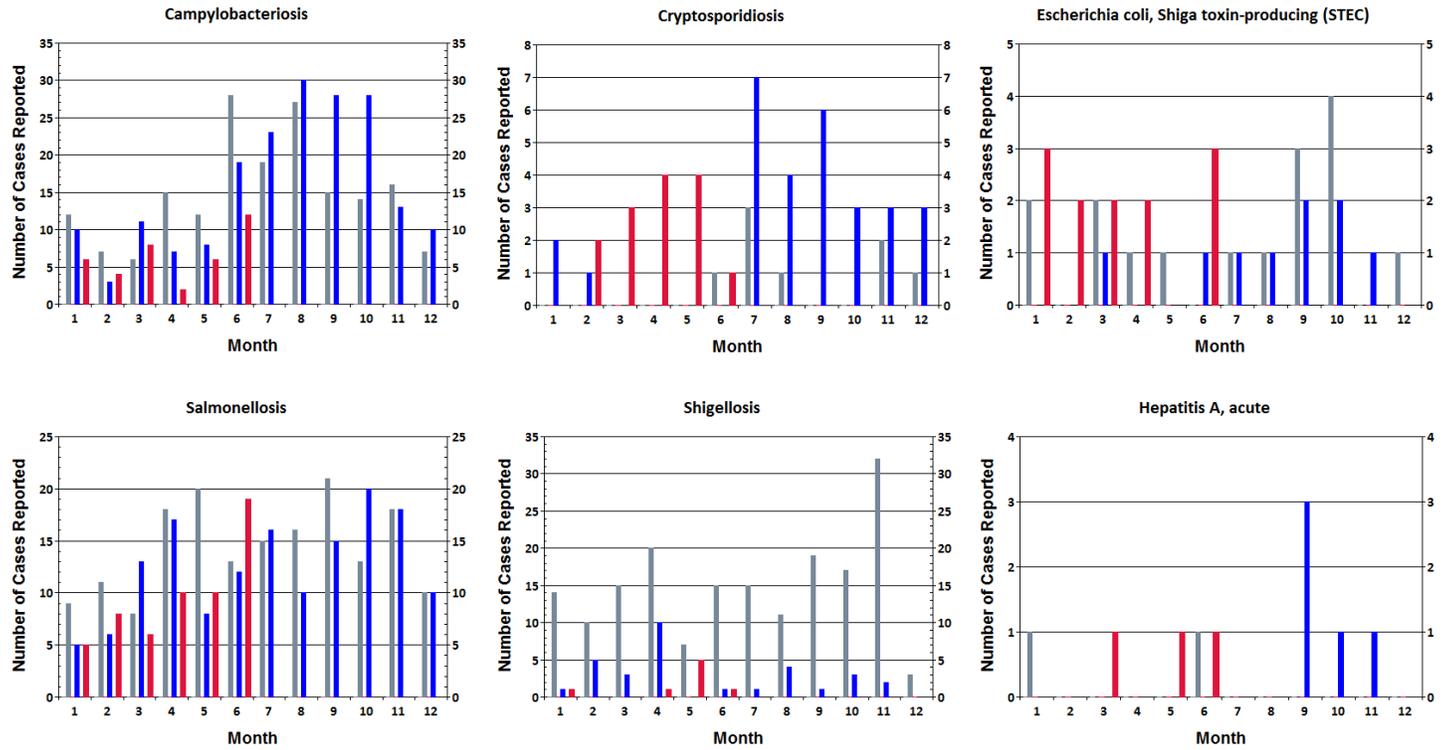
Data source: Texas NEDSS Database. Data extracted: 08/07/2014. These counts are generated by DSHS HSR1. 2014 data is preliminary and subject to change.



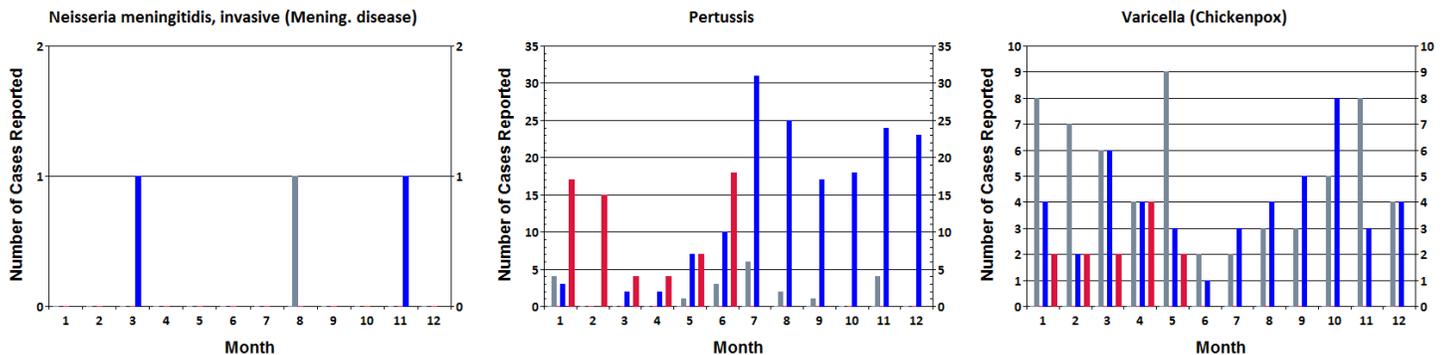
**Invasive Streptococcal Disease**



**Foodborne/Waterborne Disease**



**Other Vaccine Preventable Disease**



Continued from page 1

### DIAGNOSIS (CONTINUED)

This requires submission of stool specimens for “Ova and Parasite” testing with additional specific orders for *Cyclospora* identification. Request reflex confirmatory testing. A single negative stool specimen does not exclude the diagnosis; three specimens are optimal.

### TREATMENT

Infection is usually self-limited. Most people who have healthy immune systems will recover without treatment. Untreated people may have remitting, relapsing symptoms for weeks to months. Treatment with trimethoprim-sulfamethoxazole (TMP/SMX) for 7 to 10 days is the usual therapy for *Cyclospora* infection. There has been no effective alternative antibiotic regimen identified for patients who do not respond to the standard treatment or have a sulfa allergy.

### REPORTING

Cyclosporiasis is a notifiable condition in Texas and should be reported to the health department within 1 week. Refer to Table 1 for case definition, case classification and laboratory criteria information. Lab reports and reporting forms can be faxed to HSR1 at (806) 783-6466.

### PREVENTION

Prevention of cyclosporiasis is very basic—avoid food or water that may have been contaminated with feces. Fresh produce should always be washed thoroughly before it is consumed. This precaution may not eliminate the risk of transmission because *Cyclospora* can be difficult to wash off all produce. Treatment with chlorine or iodine is unlikely to kill *Cyclospora* oocysts.

### SOURCES

Centers for Disease Control and Prevention. Parasites—Cyclosporiasis (*Cyclospora* infection), <http://www.cdc.gov/parasites/cyclosporiasis/index.html>

RedBook: 2012 Report of the Committee on Infectious Diseases

Texas Department of State Health Services, Infectious Disease Control Unit. *Cyclospora*, <http://www.dshs.state.tx.us/idcu/disease/cyclospora/>

TABLE 1

#### Cyclosporiasis Case Definition:

An illness of variable severity caused by the protozoan *Cyclospora cayetanensis* and commonly characterized by watery diarrhea, loss of appetite, weight loss, abdominal bloating and cramping, increased flatus, nausea, fatigue, and low-grade fever. Vomiting also can be noted. Relapses and asymptomatic infections can occur.

#### Case Classification

*Confirmed:* A laboratory-confirmed case with or without clinical symptoms

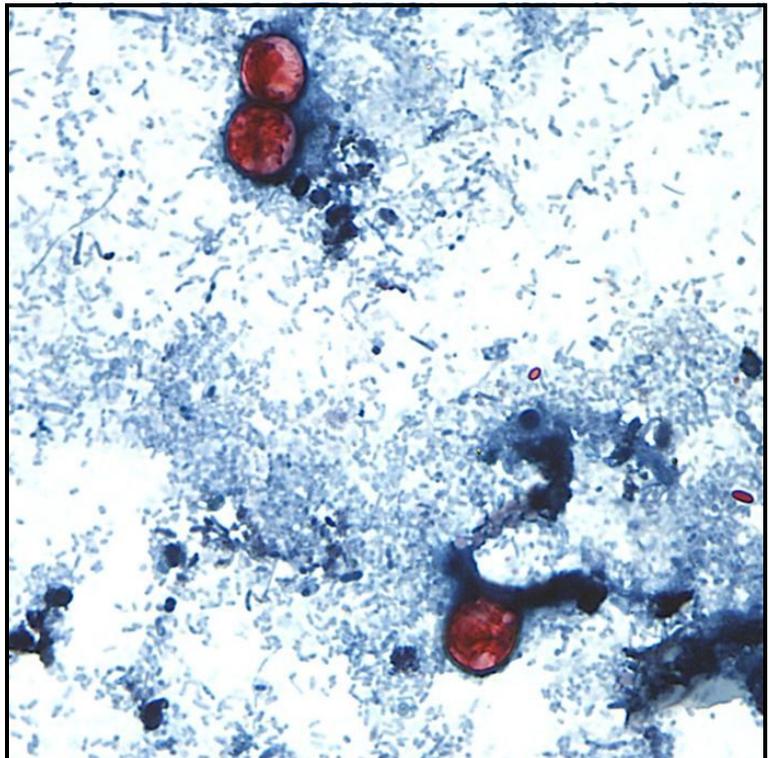
*Probable:* A clinically compatible case that is epidemiologically linked to a confirmed case

#### Laboratory Criteria:

Detection-in symptomatic or asymptomatic persons-of *Cyclospora*:

- Oocysts in stool by microscopic examination, or in intestinal fluid/aspirate or intestinal biopsy specimens, **OR**

Demonstration of sporulation, or DNA (by PCR) in stool, intestinal fluid/aspirate or intestinal biopsy specimens



Photomicrograph of fresh stool sample revealing the presence of three uniformly stained *Cyclospora cayetanensis* oocysts in the field of view. Photo courtesy of Public Health Image Library #7828.