Cryptosporidiosis

Cryptosporidiosis is a Class B Disease and must be reported to the state within one business day.

Cryptosporidiosis is a parasitic disease of public health importance, causing gastrointestinal disease and, in more severe cases, pulmonary disease. The CDC estimates that there are approximately 748,000 cases of Cryptosporidiosis in the United States, and only a small fraction are detected and reported. Annual incidence rates for the disease have been rising. Higher incidence rates may be related to more comprehensive diagnostic testing with the increase in use of gastro-intestinal panels.

Cryptosporidiosis is caused by a parasite from the *Cryptosporidium* genus. This parasite can be found in many animals, including mammals, birds and reptiles. The two species of *Cryptosporidium* that most commonly affect humans are *C. parvum* and *C. hominis*.

Cryptosporidium may be found in drinking and recreational waters in all regions of the U.S. and throughout the world. It can also be present on food if handled by someone who is infected. In people, infection tends to occur sporadically, most often from drinking contaminated water or through exposure in daycare settings.

In infected individuals, oocysts appear in stool at the onset of symptoms and are immediately infectious upon excretion. Diagnosis is traditionally made by the identification of oocysts in feces. *Cryptosporidium* oocysts are resistant to many common disinfectants, including chlorine, making it difficult to kill in treated water, but are sensitive to ultraviolet radiation and drying out. The oocysts are approximately three micrometers in diameter, so can pass through filters with larger pores.

Although the disease is often self-limiting in healthy individuals, it can be more severe and long-lasting in those who are immunocompromised. As a result, cases are more frequently identified and reported in populations with weakened immune systems.

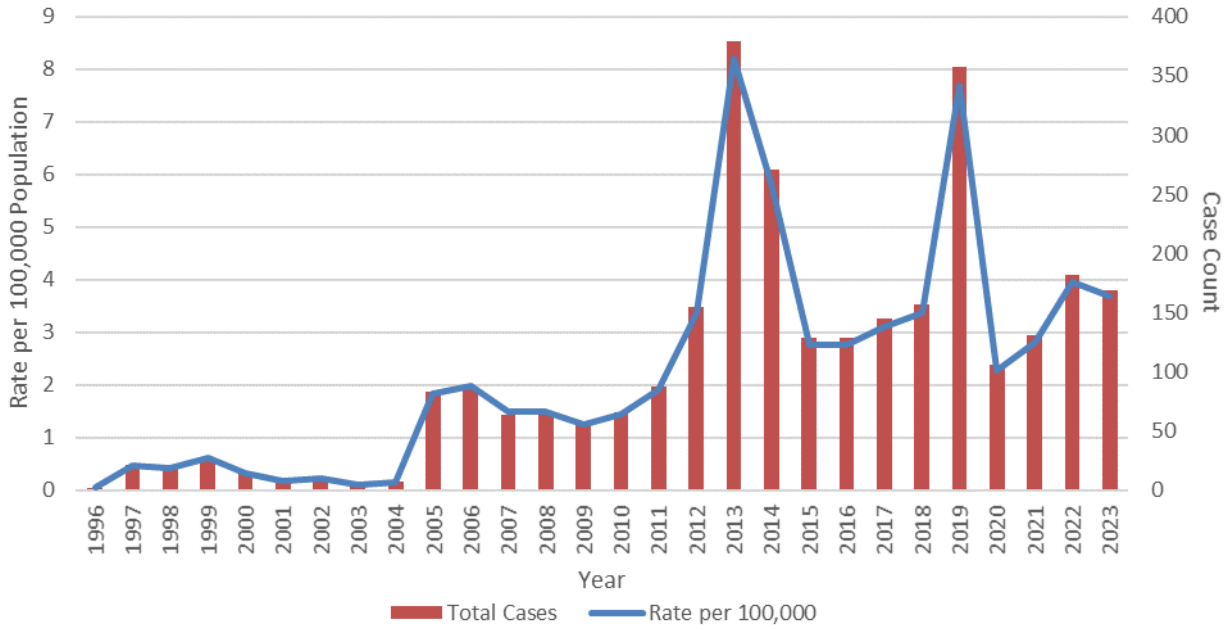
Numbers, Rates and Trends

From 1996 to 2023, Louisiana rates of cryptosporidiosis ranged from 0.05 to 8.19 cases per 100,000 population. The small rate of reported cases in earlier years is attributed to lack of testing and reporting. There was an increase in the number of cases reported to OPH in 2005 and 2006 partially due to two outbreaks, described further below.

Post 2006, the number of cases remained higher than years prior to 2005. The peak in 2019 was due to several small clusters throughout the state. Other reasons for the upswing involve an increase in laboratory diagnostic testing and diagnosis of *Cryptosporidium* in addition to an increase in the reporting of cryptosporidiosis.

In 2020 and 2021, there was a large decrease in the number of cases reported due to the COVID-19 pandemic. During the COVID-19 pandemic, there was a decrease in reporting of non-COVID-19 diseases due to individuals being less likely to seek care for non-COVID-19 illnesses, providers testing for fewer diseases, and many individuals not congregating or being exposed to other illnesses in general. Since 2021, rates have remained between 2.81 and 3.96 (Figure 1).

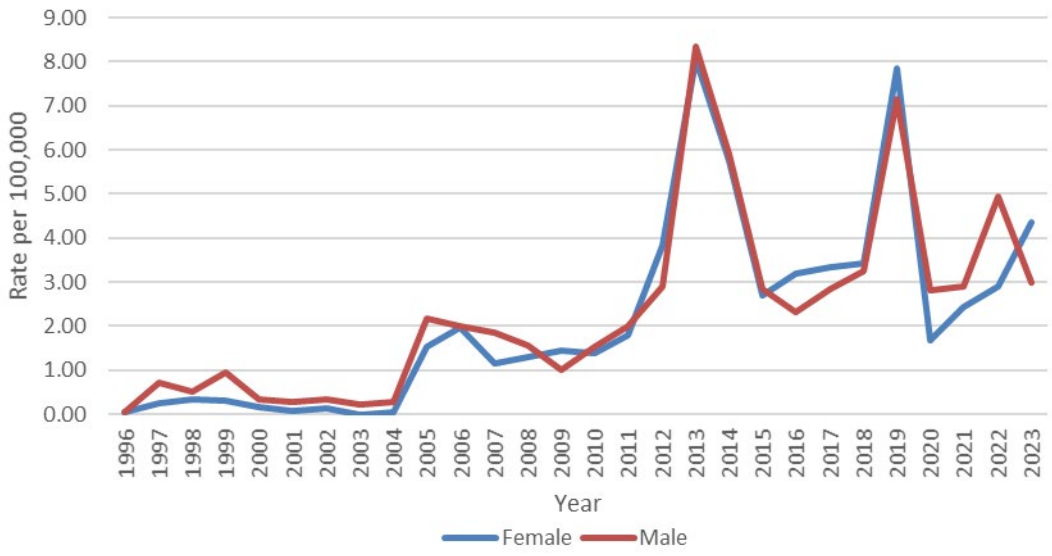
Figure 1: Cryptosporidiosis Rate per 100,000 Population and Case Count, Louisiana: 1996-2023



Sex

The average rate of reported cryptosporidiosis cases for males and females have been similar since 1996. (Figure 2).

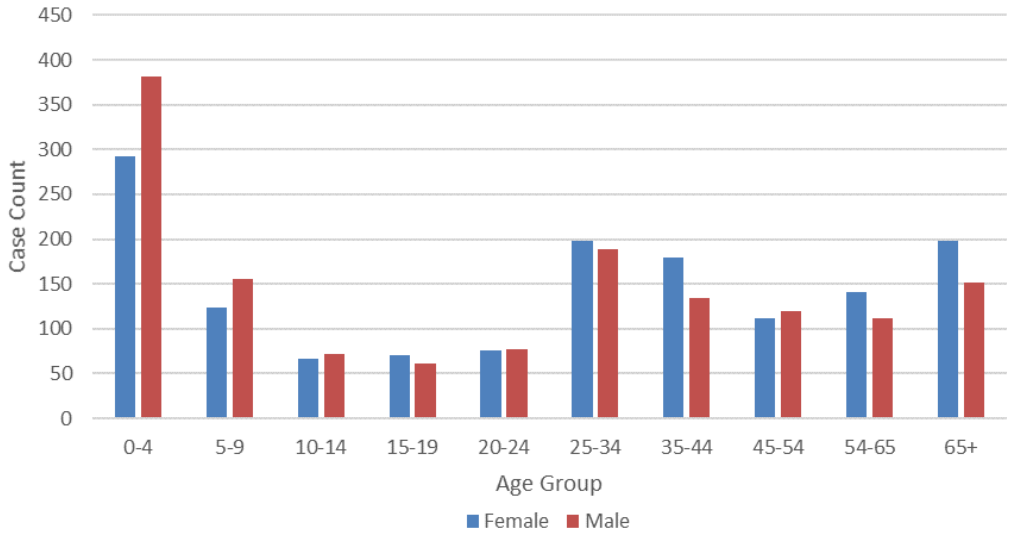
Figure 2: Cryptosporidiosis Rate per 100,000 Population by Sex, Louisiana: 1996-2023



Age

The highest number of cases of cryptosporidiosis were reported among very young children, newborn to four years of age (Figure 3). This is likely due to younger children spending time in daycare or preschool, where close contact and shared surfaces are common. These environments are high-risk settings for fecal-oral route transmissions.

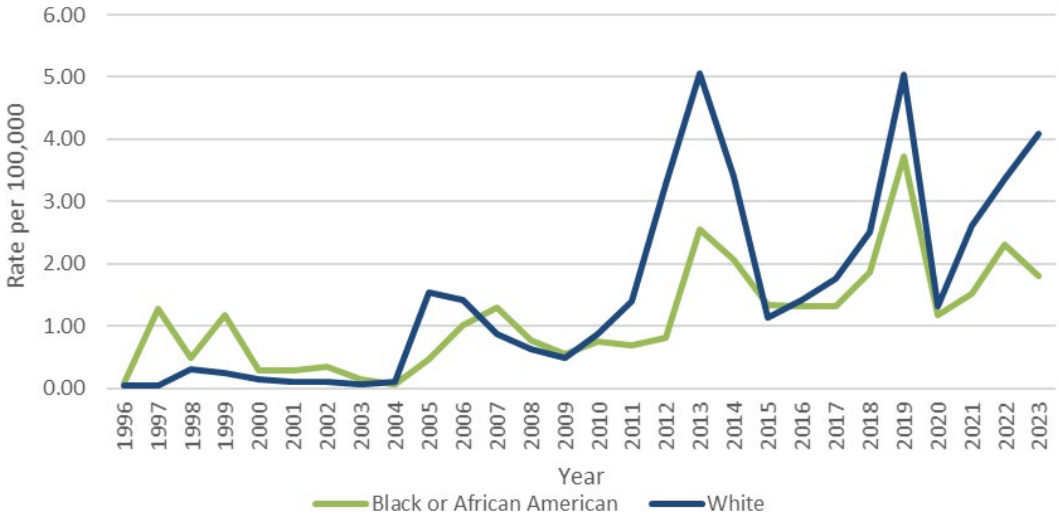
Figure 3: Cryptosporidiosis Case Count by Age Group and Sex, Louisiana: 1996-2023



Race

Race rates may be underestimated due to missing data. Reported trends show that cryptosporidiosis incidence has generally been higher among White individuals than Black or African American individuals, particularly during outbreak years like 2013 and 2019. This may reflect differences in healthcare access, testing practices, or exposure risk rather than true differences in disease burden.

Figure 4: Cryptosporidiosis Rate by Race, Louisiana: 1996-2023



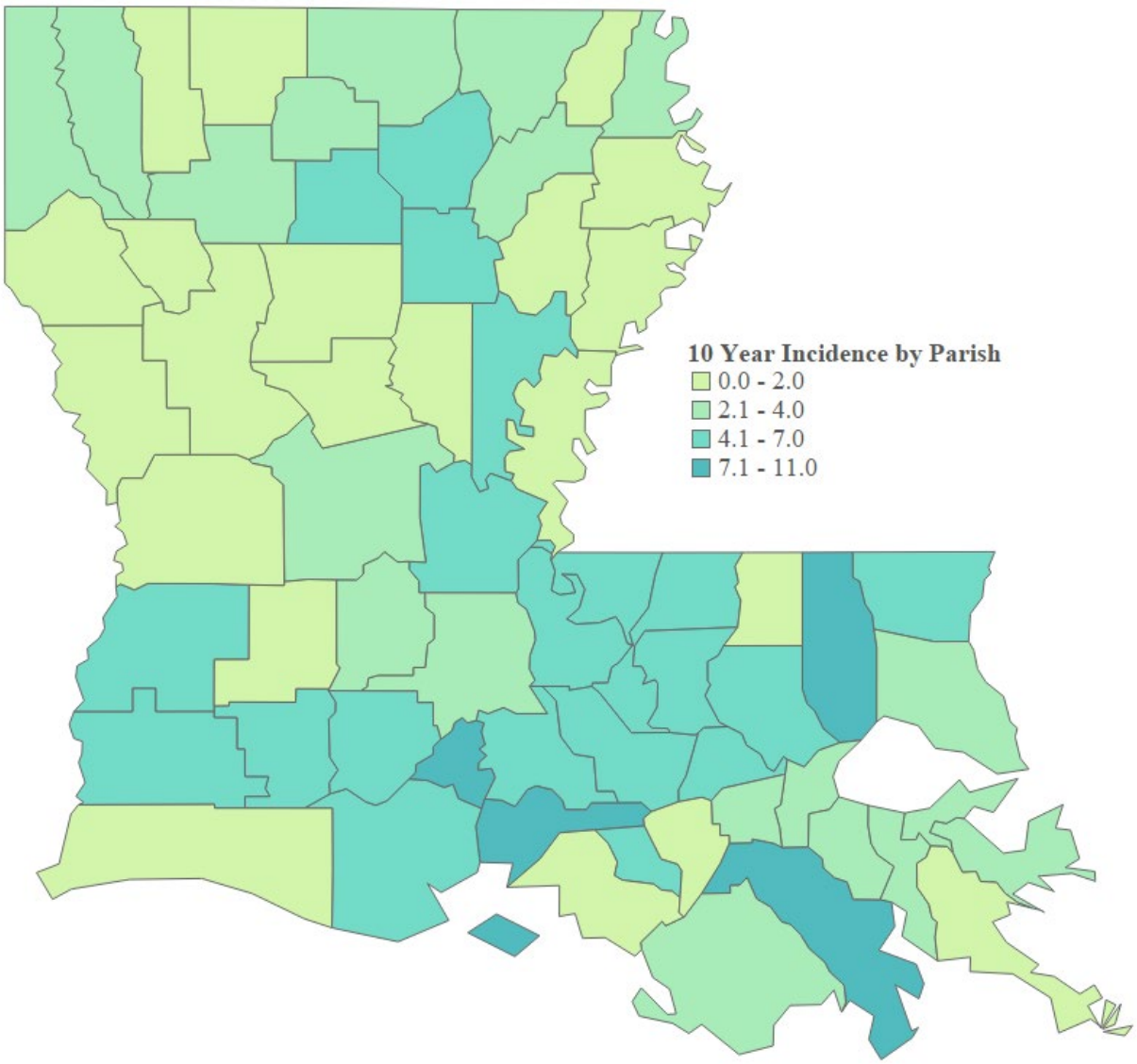
Geography

The highest incidence rates of Cryptosporidiosis were among the following Louisiana parishes: Lafayette, Lafourche, Tangipahoa and Iberia with 10 year incidence rates of 10.78, 10.76, 8.57 and 8.05 cases per 100,000 population respectively (Table; Figure 5).

Table: Cryptosporidiosis 10-Year Incidence Rate by Parish - Louisiana, 2014-2023

Parish	Incidence Rate 2014-2023	Parish	Incidence Rate 2014-2023
Acadia	6.80	Madison	0.94
Allen	1.23	Morehouse	2.76
Ascension	5.92	Natchitoches	0.79
Assumption	0.92	Orleans	3.00
Avoyelles	4.74	Ouachita	4.14
Beauregard	4.08	Plaquemines	0.43
Bienville	3.02	Pointe Coupee	4.68
Bossier	3.45	Rapides	3.00
Caddo	2.20	Red River	1.23
Calcasieu	6.69	Richland	2.48
Caldwell	4.08	Sabine	1.72
Cameron	0.00	Saint Bernard	2.43
Catahoula	4.27	Saint Charles	2.68
Claiborne	1.32	Saint Helena	0.95
Concordia	0.00	Saint James	2.42
De Soto	1.11	Saint Landry	3.26
East Baton Rouge	4.72	Saint Martin	5.12
East Carroll	2.80	Saint Mary	1.40
East Feliciana	4.64	Saint Tammany	3.46
Evangeline	3.33	St John the Baptist	2.36
Franklin	1.50	Tangipahoa	8.57
Grant	1.80	Tensas	0.00
Iberia	8.05	Terrebonne	2.36
Iberville	4.74	Union	2.75
Jackson	6.46	Vermilion	5.79
Jefferson	2.42	Vernon	1.63
Jefferson Davis	6.63	Washington	5.66
La Salle	0.08	Webster	0.79
Lafayette	10.78	West Baton Rouge	4.12
Lafourche	10.76	West Carroll	0.95
Lincoln	2.52	West Feliciana	5.84
Livingston	5.86	Winn	1.43

Figure 5: Cryptosporidiosis 10 Year Incidence by Parish, Louisiana: 2014-2023



Outbreaks

2005 Outbreak

In August 2005, the Louisiana OPH was contacted by a concerned parent reporting severe diarrheal illness in her two-year old child. The parent suggested the child may have contracted the illness while playing at the water-splash playground of a local municipal park. Several additional children that had been at the playground were also reported ill. The children were diagnosed with laboratory-confirmed cryptosporidiosis. In total, 31 cases were considered part of the outbreak. All but two were children, with an average age of seven years.

It was determined that the event most likely resulted from a fecal accident on the splash play-ground. Even though a report of such an accident was not obtained, it is almost certain that the water-splash grounds were contaminated with fecal material of either a pet that strayed onto the grounds or from an already sick child

(possibly one of the smaller children in diapers). The park was thoroughly disinfected and reopened shortly after.

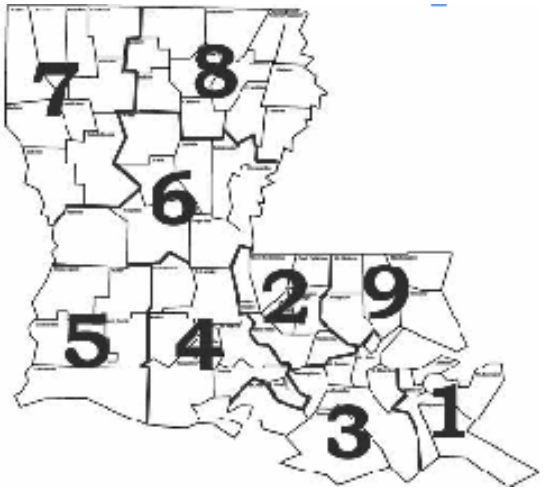
2006 Outbreak

From July to August 2006, 35 laboratory-confirmed cases of cryptosporidiosis were reported in the greater Baton Rouge area. An additional 38 probable cases (not included in the total of confirmed cases) were identified. After an epidemiologic investigation, it was determined that this outbreak was linked to attendance at a water park in the area. The average age of affected persons was 10.8 years with a range of one year through 66 years of age.

2013 Outbreak

Compared to previous years, there was a significant increase in reported cases of cryptosporidiosis in 2013 starting in mid-July and lasting until December. Most of the cases were residing in OPH regions 2, 4 and 9 (Figure 6).

Figure 6: Louisiana Department of Health Regional Map



A case control study was performed from August to September, 2013. It was found that over 50% of Cryptosporidiosis cases reported exposure to surface or recreational water in the two weeks prior to onset compared to 20% of controls. Those having a diagnosis with Cryptosporidiosis were five times more likely to have been exposed to surface or recreational water prior to onset compared to those without a diagnosis of Cryptosporidiosis.

Prevention

Although water exposure was significantly associated with illness, this does not appear to be a point source outbreak, but a continuous community outbreak involving multiple water venues including public and private recreational water venues. Because Cryptosporidium is resistant to chlorine, the following recommendations were made:

- Avoid swimming in pools, splash parks, and other recreational water facilities until two weeks after cessation of diarrhea.
- Change diapers in the bathroom, not at the poolside.
- Wash children thoroughly (especially their bottoms) with soap and water after they use the toilet, or after their diapers are changed and before they enter the water; shower before entering the water.