

## Leptospirosis

*Leptospirosis is a Class C disease which includes diseases or conditions of significant public health concern. Class C diseases should be reported to the Office of Public Health (OPH) by the end of the workweek after the existence of a case, suspected case, or a positive laboratory result is known.*

Leptospirosis is a zoonotic disease of worldwide distribution, caused by bacteria of the genus *Leptospira*. Infections result in a wide range of symptoms; however, some infected persons may have no symptoms at all. The agent is not a potential bio-weapon, but the symptoms may mimic those of hemorrhagic fevers.

The *Leptospira* bacteria are spread through the urine of infected animals, including cattle, pigs, horses, dogs, rodents and wild animals. Humans can become infected through direct contact with urine of infected animals or through contact with water, soil or food contaminated with urine of infected animals. The bacteria can survive in the environment for weeks to months. Bacteria enter the body through skin or mucous membranes, and drinking contaminated water can also cause infection. Outbreaks are usually caused by exposure to contaminated water, such as floodwaters. The infection is rarely spread person-to-person.

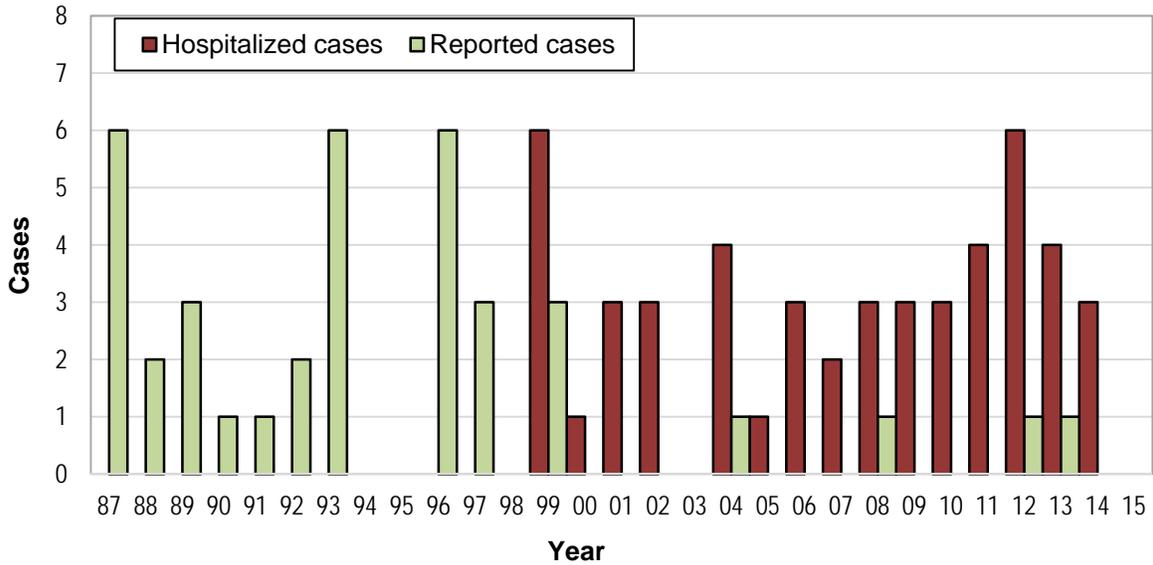
Leptospirosis is commonly seen as an occupational hazard for people who work outdoors or with animals. The disease has been associated with swimming and other activities in contaminated lakes and rivers, and is therefore a recreational hazard for campers and those participating in outdoor sports, particularly in tropical or temperate climates. The incidence of infection among urban children also appears to be increasing, according to the Centers for Disease Control and Prevention (CDC).

Leptospirosis can cause a wide range of symptoms including high fever, headache, chills, muscle aches, vomiting, jaundice, red eyes, abdominal pain, diarrhea and rash. The incubation period is two days to four weeks, and illness usually begins abruptly with fever and other symptoms. The disease often occurs in two phases, with the second phase being more severe. Illness lasts from a few days to three weeks or longer and, without treatment, can lead to kidney damage, meningitis, liver failure, respiratory distress, and even death. Leptospirosis is treated with antibiotics and should be given early in the course of disease.

### Incidence

Incidence of Leptospirosis is low with less than ten cases reported a year. Although leptospirosis reporting is no longer required as of 1999, reports are still collected by OPH. A comparison of cases reported to OPH and hospitalized cases from The Louisiana Inpatient Hospital Discharge Data (LaHIDD) shows that reporting has declined since 1999 but hospitalized cases continue to be diagnosed (Figure 1).

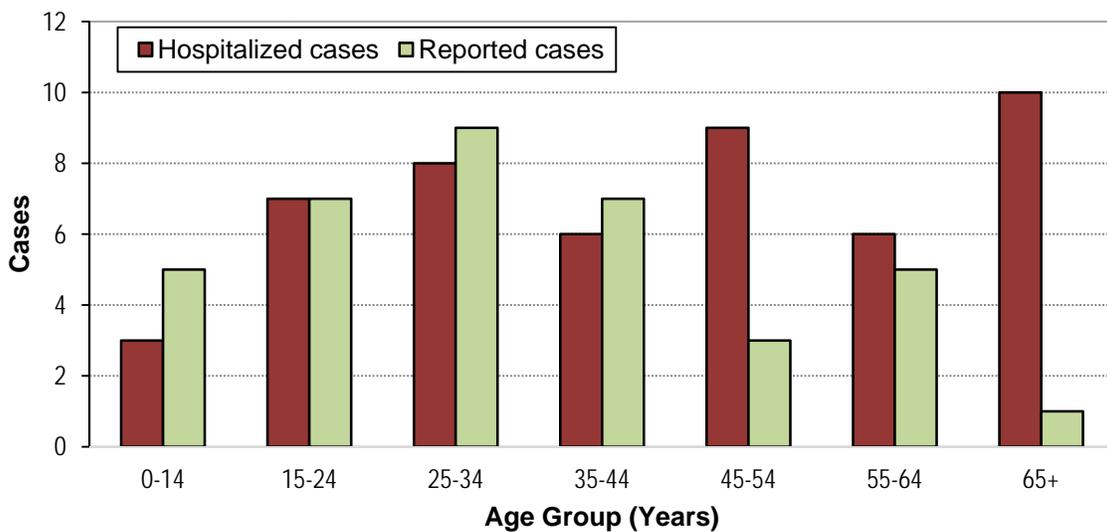
Figure 1: Leptospirosis reported and hospitalized\* cases - Louisiana, 1987-2015  
 (\*LaHIDD data available 1999-2014)



**Age Distribution**

Reported Leptospirosis cases occur most often in the 25 to 35-year-old age group while hospitalized cases were more consistent across age groups (Figure 2).

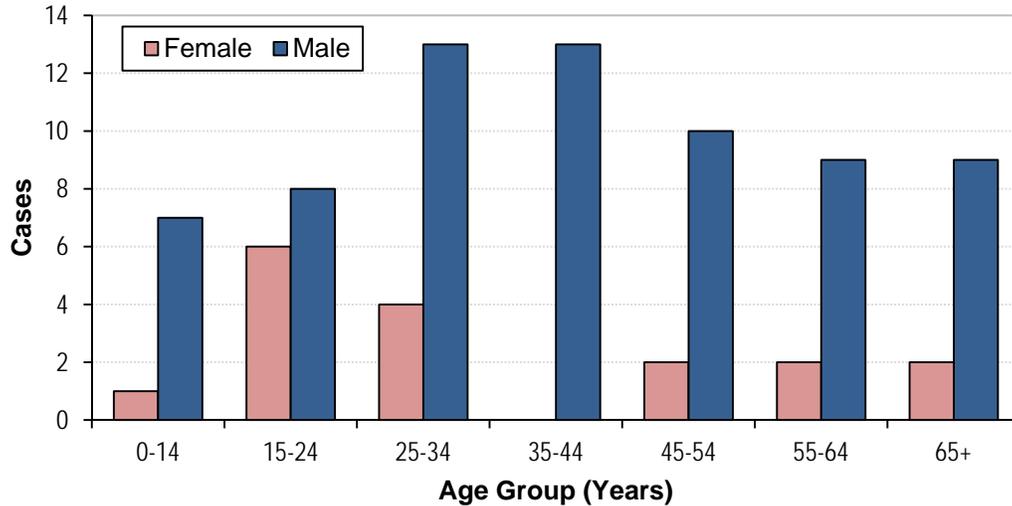
Figure 2: Leptospirosis reported and hospitalized\* cases by age group - Louisiana, 1987-2015  
 (\*LaHIDD data available 1999-2014)



**Sex**

The majority of leptospirosis cases in Louisiana occur among males, which may be due to the type of occupational hazard associated with this disease (Figure 3).

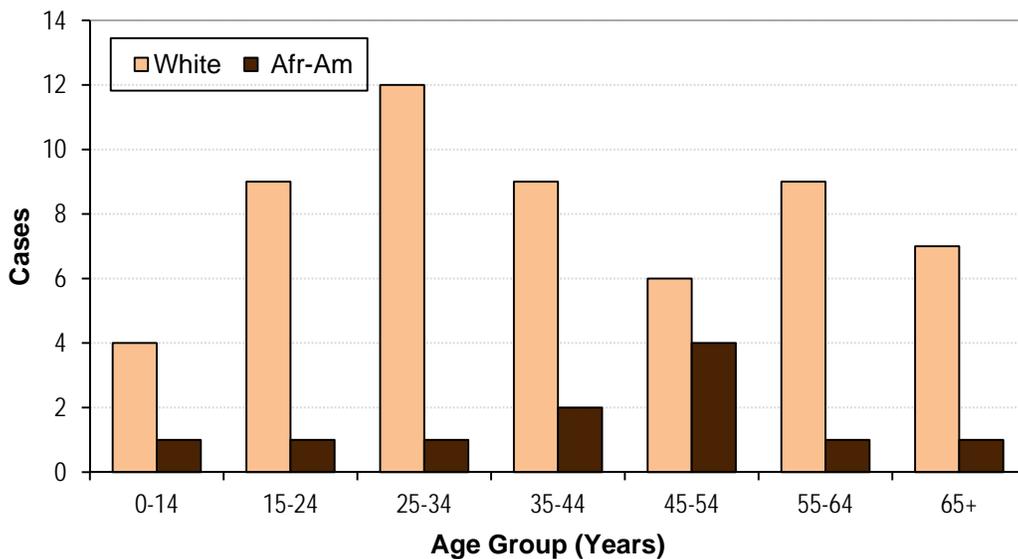
Figure 3: Leptospirosis reported and hospitalized\* cases by sex and age group - Louisiana, 1987-2015 (\*LaHIDD data available 1999-2014)



**Race**

The majority of leptospirosis cases in Louisiana occur among Whites (Figure 4).

Figure 4: Leptospirosis reported and hospitalized\* cases by race and age group Louisiana, 1987-2015 (\*LaHIDD data available 1999-2014)



## Geographic Distribution

The geographic distribution of leptospirosis cases in Louisiana includes both urban rural parishes (Table 1).

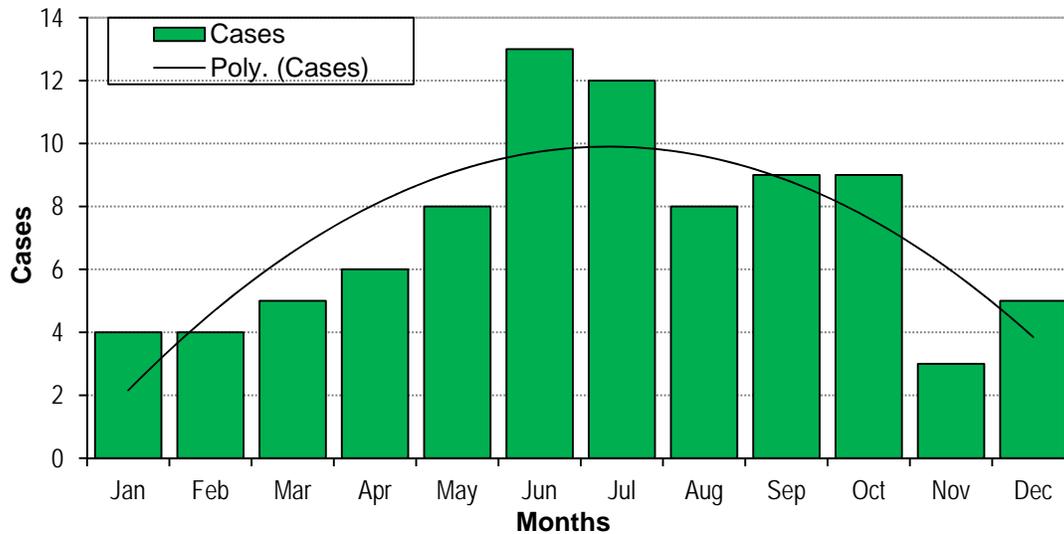
Table 1: Reported and hospitalized\* leptospirosis cases - Louisiana, 1987-2015  
(\*LaHIDD data available 1999-2014)

Region	Parish	Cases 1987-2014	Region	Parish	Cases 1987-2014
1	Jefferson	9	6	Concordia	0
	Orleans	6		Grant	1
	Plaquemines	1		La Salle	0
	St. Bernard	1		Rapides	2
2	Ascension	3		Vernon	1
	E. Baton Rouge	3		Winn	0
	E. Feliciana	0	7	Bienville	0
	Iberville	2		Bossier	0
	Pointe Coupee	1		Caddo	2
	W. Baton Rouge	1		Claiborne	0
W. Feliciana	1	De Soto		3	
3	Assumption	0		Natchitoches	0
	Lafourche	1		Red River	0
	St. Charles	2		Sabine	1
	St. James	0		Webster	0
	St. John	2		8	Caldwell
	St. Mary	0	E. Carroll		0
	Terrebonne	4	Franklin		1
4	Acadia	5	Jackson		1
	Evangeline	3	Lincoln		0
	Iberia	2	Madison		0
	Lafayette	4	Morehouse		0
	St. Martin	0	Ouachita		1
	St. Landry	3	Richland		0
	Vermilion	4	Tensas		0
5	Allen	1	Union	0	
	Beauregard	0	W. Carroll	0	
	Calcasieu	0	9	Livingston	0
	Cameron	0		St. Helena	0
	Jefferson Davis	2		St. Tammany	4
6	Avoyelles	1		Tangipahoa	3
	Catahoula	1		Washington	1

## Seasonality

The seasonal distribution of leptospirosis shows a higher number of cases in warmer months, with a five-month peak from June to October ( $p=0.015$ ), (Figure 5).

Figure 5: Seasonal distribution of reported and hospitalized\* leptospirosis cases Louisiana, 1987-2015 (\*LaHIDD data available 1999-2014)



The Hewitt's rank-sum test (for a seasonal peak) shows a significant five-month peak: June to October (Rank sum: 50;  $P = 0.015$ ).

## Mortality

There were no known deaths among reported or hospitalized cases of leptospirosis in Louisiana from 1987 to 2015. The outcome of the majority of reported cases is unknown, while the majority of hospitalized cases were discharged home.