

## Tularemia

*Tularemia is a Class A disease. It must be reported to the state within 24 hours by calling the phone number listed on the website.*

Tularemia is a zoonotic disease, transmitted from animals to humans. Originally described in the United States in 1911, the disease has been reported in all states except Hawaii. However, disease surveillance indicates a low level of natural transmission.

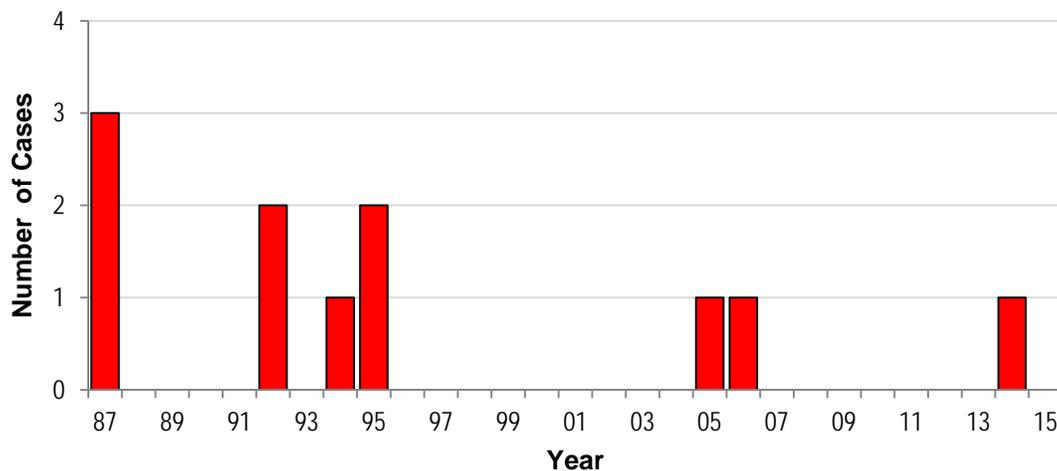
Tularemia is a bacterial disease caused by the Gram-negative coccobacillus, *Francisella tularensis*. In the U.S., most people acquire the infection by arthropod bites - primarily ticks, or by contact with infected mammals - particularly rabbits. Deerflies can also serve as vectors and transmission from other animals, such as muskrats, is possible. Laboratory exposure, transmission through contaminated drinking water or food, and transmission via inhalation of contaminated dust or aerosols have also occurred.

The disease usually presents as an acute febrile illness. Several clinical presentations, depending on route of entry, can occur, including mucus membrane or skin ulceration, pharyngitis, ocular lesions, regional lymph-adenopathy and pneumonia.

Presumptive diagnosis can be made by serology or by the detection of antigen in tissues. Culture of the organism or demonstration of a four-fold increase in antibody titer is used for confirmation.

Reporting of tularemia was suspended in 1994, but was reintroduced in 2000 due to concerns with use of the agent as a biological weapon. In fact, outbreaks of pneumonic tularemia, especially in low-incidence areas, should initiate suspicion of intentional use. Only 11 cases have been reported in Louisiana since 1987 (Figure 1).

Figure 1: Tularemia cases - Louisiana, 1987-2015



Cases of tularemia that occur in summer are usually associated with arthropod bites, while winter exposures are commonly associated with hunter contact of rabbit carcasses. In recent years, a seasonal increase in late spring and summer has occurred when arthropod bites are most common. Nearly 70% of cases report an onset from May through August (Table 1).

Table 1: Characteristics of Tularemia Cases - Louisiana, 1987-2015

Case	Year	Month	Age	Sex	Parish	Exposure	Clinical	Hospitalized	Outcome
1	1987	January	70	Male	Vermilion	Unknown		Unknown	Unknown
2	1987	March	1	Male	Evangeline	Unknown		Unknown	Unknown
3	1987	June	1	Male	St. Tammany	Unknown		Unknown	Unknown
4	1992	October	72	Male	Lafayette	Unknown		Unknown	Died
5	1992	October	25	Male	Orleans	Eating wild rabbit		Unknown	Unknown
6	1994	August	44	Male	Tangipahoa	Unknown		Unknown	Died
7	1995	May	85	Female	Iberville	Unknown		Unknown	Unknown
8	1995	May	59	Male	Bossier	Unknown		Unknown	Unknown
9	2005	February	48	Unknown	East Baton Rouge	Skinning and cleaning wild rabbits		Yes	Recovered
10	2006	December	47	Male	Orleans	Exposure to rodents in abandoned building		Yes	Recovered
11	2014	May	70	Male	Vernon	Hunting trip		Unknown	Recovered

Recently, *Francisella novicida* has begun to be considered a subspecies of *F. tularensis*, due to genetic similarities between the two bacteria. Infection of *F. novicida* is rare and normally occurs in immune compromised patients, but has occurred in Louisiana. The reservoir and transmission of *F. novicida* are unknown. Symptoms include chills, conjunctivitis, fever, headache, myalgia, arthralgia, and skin ulceration. In spring and summer of 2011, four cases of *F. novicida* were identified at a residential care facility in Louisiana, where the organism was believed to have been spread through ice. Continued monitoring identified a reoccurring infection in a prior patient, which was determined to be a novel infection instead of a persistent one.