

Blastomycosis

Blastomycosis is a Class C Disease and must be reported to the state within five business days.

Blastomycosis is caused by the fungus *Blastomyces dermatitidis*. In the United States, it can be mainly found in the Midwestern, South-Central and Southeastern states. Especially, in areas surrounding the Ohio and Mississippi River valleys, the Great Lakes and the Saint Lawrence River. Infection is acquired through inhalation of conidia from soil. About half of those infected with blastomycosis will experience symptoms, which are similar to flu symptoms, including fever, chills, cough, muscle aches, joint pain, and chest pain. Symptoms appear between 3 weeks to 3 months after a person breathes the spores in. Blastomycosis can, in some cases, disseminate to other parts of the body including skin and bones. The organism originates in the environment; there is no person-to-person or animal-to-person transmission.

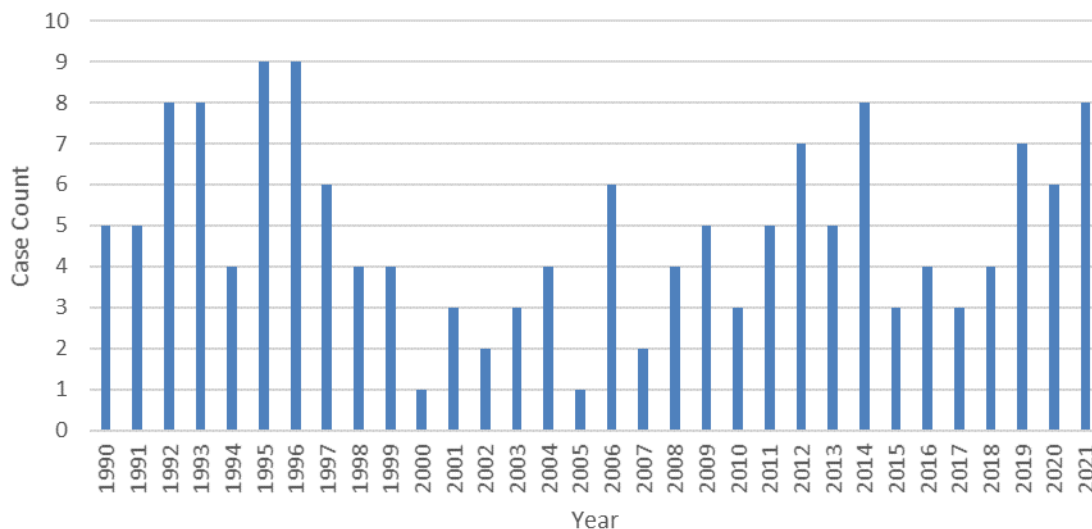
Demonstration of the organism in a smear or culture of tissues or exudates is the primary method of diagnosis. Serologic techniques and skin antigen testing are unrewarding. Blastomycosis rarely resolves spontaneously; therefore, all patients should receive anti-fungal therapy. There is no vaccine presently available.

Risk of infection may be greater for individuals with underlying medical conditions, such as diabetes, as well as individuals who engage in activities exposing them to wooded areas, such as farmers, forestry workers, hunters and campers. Those with weakened immune systems may consider avoiding wooded areas where blastomycosis is endemic.

Cases and Rates

Infection is sporadic in Louisiana, with the number of cases ranging from one to nine per year (Figure 1).

Figure 1: Blastomycosis Case Count - Louisiana, 1990-2021



Blastomycosis also occurs sporadically in dogs in Louisiana, particularly in large breeds that live close to large bodies of water. The southeastern U.S., and the Mississippi and Ohio River Valleys report the highest incidence of canine cases in the United States.

Sex, Race and Age

Of cases reported in Louisiana the most were in the 65+ age group (Figure 2). Though the 10 year incidence rate is greatest in 35-44 and 45-55 age groups, respectively (Figure 3). Over the years Black or African American individuals have a higher incidence rate compared to Whites (Figure 4).

Figure 2: Blastomycosis Case Counts by Age, Louisiana 1990-2021

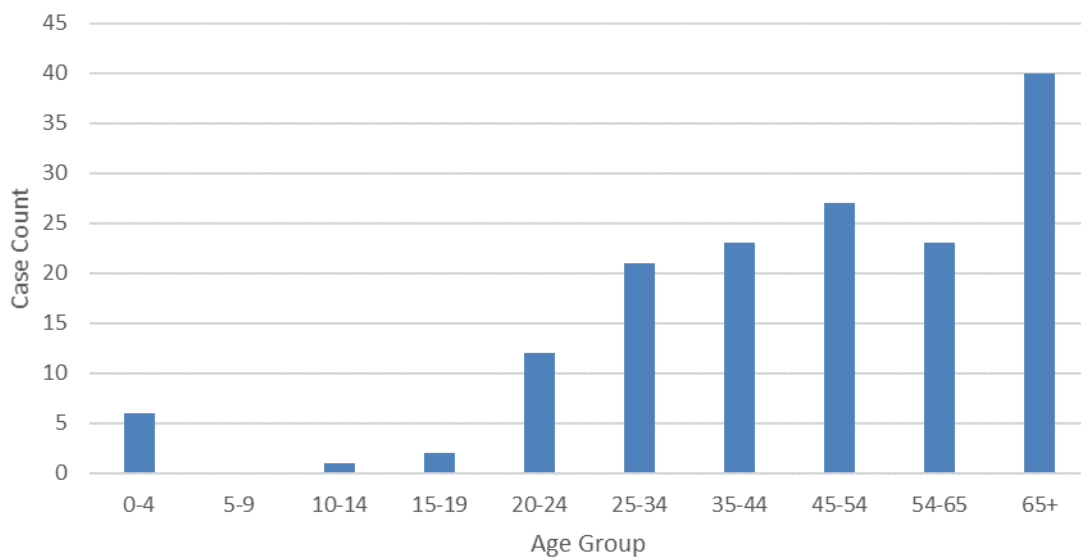


Figure 3: Blastomycosis 10 Year Incidence Rates by Age - Louisiana, 2012-2021

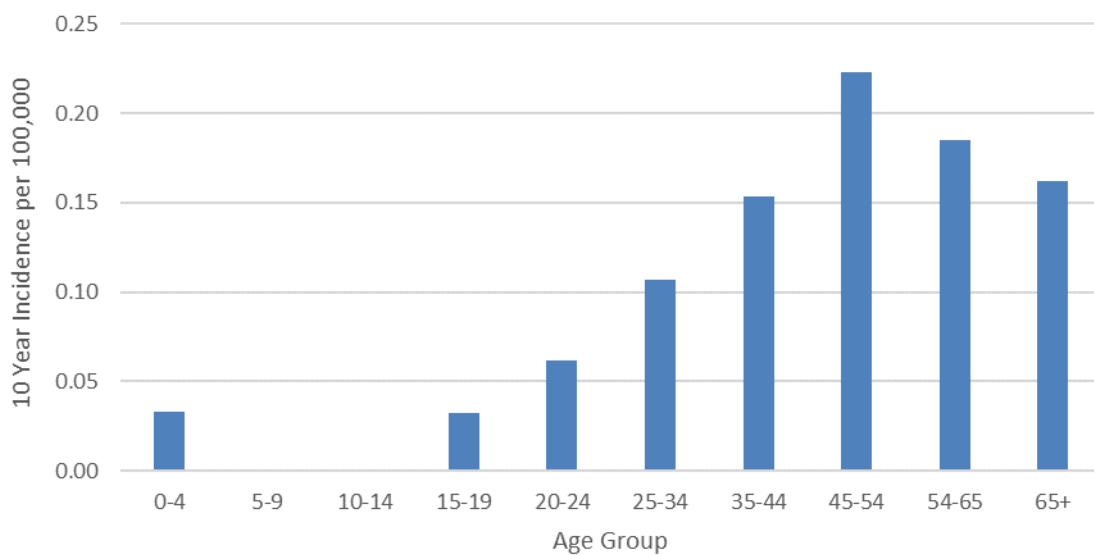


Figure 4: Blastomycosis Incidence Rate by Race – Louisiana 1990 – 2021

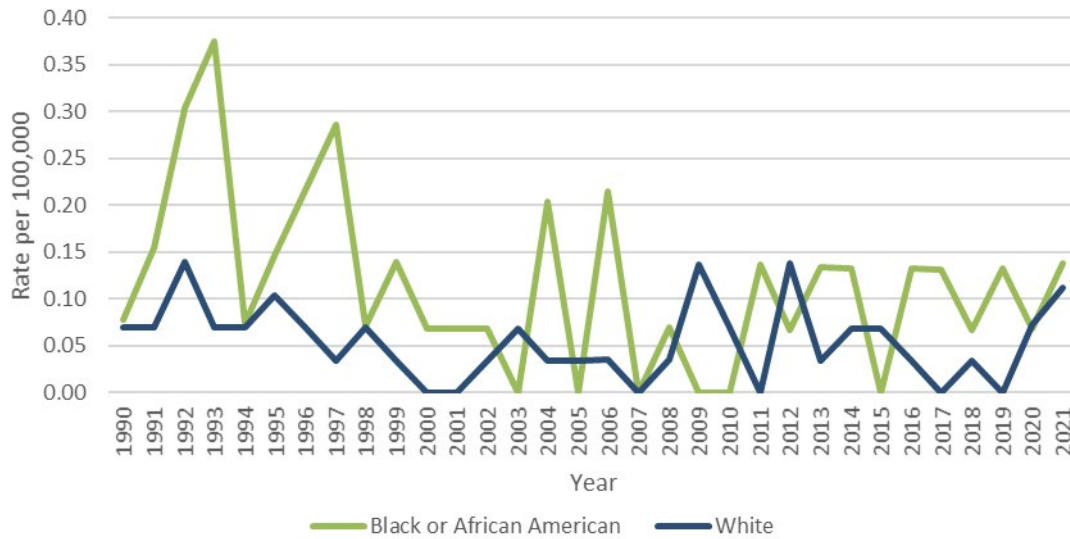
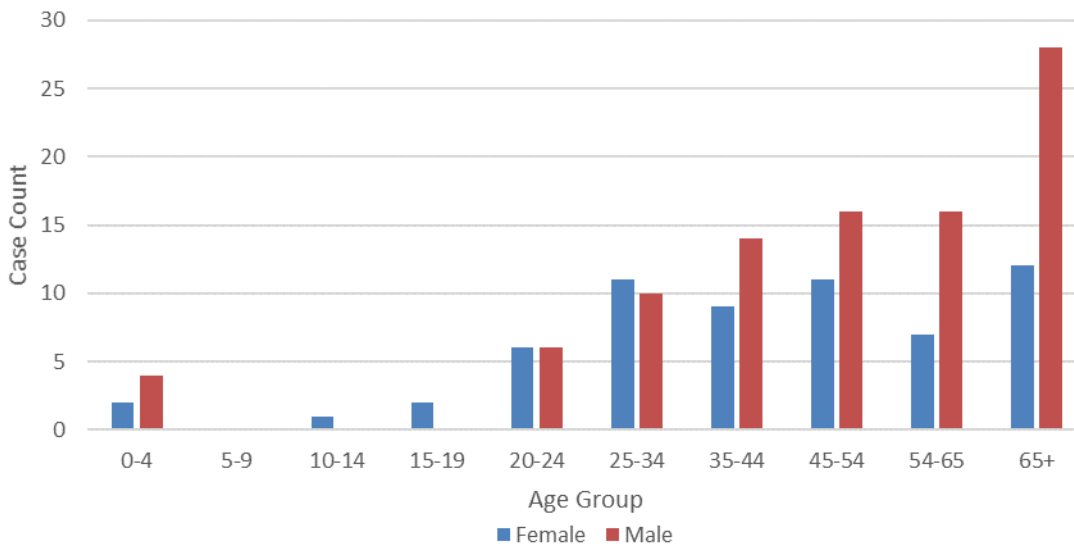


Figure 5: Blastomycosis Cases by Age and Sex – Louisiana 1990-2021



Geographical Distribution

Historically, most cases have occurred in northern Louisiana, however in the late 1970s and early 1980s there was an intense focus in Washington parish and elevated incidence in the neighboring parishes (St. Tammany and Tangipahoa). This focus seems to have faded, although the area continues to give rise to the highest number of cases compared to the majority of other parishes. Similar case numbers in Orleans, Caddo and East Baton Rouge parish, which contain the three populous cities in Louisiana (Table).

Table: Blastomycosis 10 Year Incidence per 100,000 Population (2012-2012) and Total Cases (1990-2021) by Parish

Parish	10 Year Incidence Rate	Total Cases	Parish	10 Year Incidence Rate	Total Cases
Acadia	0.00	0	Madison	0.89	2
Allen	0.00	1	Morehouse	0.00	0
Ascension	0.08	4	Natchitoches	0.00	1
Assumption	0.45	1	Orleans	0.10	12
Avoyelles	0.25	1	Ouachita	0.26	8
Beauregard	0.27	1	Plaquemines	0.00	0
Bienville	0.00	2	Pointe Coupee	0.00	1
Bossier	0.00	1	Rapides	0.00	0
Caddo	0.28	13	Red River	0.00	0
Calcasieu	0.05	2	Richland	0.49	2
Caldwell	0.00	1	Sabine	0.00	0
Cameron	0.00	0	Saint Bernard	0.00	0
Catahoula	1.03	2	Saint Charles	0.19	1
Claiborne	0.63	6	Saint Helena	0.00	0
Concordia	0.00	2	Saint James	0.47	4
De Soto	0.37	1	Saint John the	0.00	3
East Baton	0.09	8	Saint Landry	0.24	3
East Carroll	0.00	0	Saint Martin	0.00	0
East Feliciana	0.00	0	Saint Mary	0.19	2
Evangeline	0.00	0	Saint Tammany	0.04	8
Franklin	0.00	0	Tangipahoa	0.46	16
Grant	0.45	1	Tensas	0.00	0
Iberia	0.14	1	Terrebonne	0.18	2
Iberville	0.00	1	Union	0.00	2
Jackson	0.00	3	Vermilion	0.00	0
Jefferson	0.02	3	Vernon	0.40	2
Jefferson Davis	0.00	1	Washington	0.43	14
La Salle	0.00	2	Webster	0.26	3
Lafayette	0.00	3	West Baton	0.00	0
Lafourche	0.00	0	West Carroll	0.00	0
Lincoln	0.21	5	West Feliciana	0.65	1
Livingston	0.14	3	Winn	0.00	0

The Washington Parish Outbreak

When physicians in Washington parish began suspecting an unusually high incidence of the disease in their area, a special study was initiated and carried out from 1976 to 1985 to identify all cases of blastomycosis in this parish. The mean annual incidence rates for Louisiana and for Washington Parish were 0.23 and 6.8 cases per 100,000 population, respectively. That rate for Washington Parish is the highest annual incidence rate documented for a population in a non-outbreak setting in Louisiana.

Among the 30 cases detected in Washington Parish, the age range was three weeks to 81 years. Five cases died; of these, one was an infant who may have been infected in utero and another was an adult who developed clinical symptoms compatible with adult respiratory distress syndrome. There was no geographic clustering among cases; a case-control study failed to identify specific activities or host factors which may have predisposed them to infection.

The authors of the study concluded that Washington Parish was probably a hyperendemic area for blastomycosis because environmental conditions were especially conducive to *B. dermatitidis* growth. Most cases were sporadically infected. (Common-source exposures to *B. dermatitidis* with resultant clinical illness are rare even in hyperendemic settings.) Natural resistance to the organism seems to be a factor in preventing infection.

Seasonality

Blastomycosis infections occur throughout the year in Louisiana (Figure 6).

Figure 6: Seasonality for Blastomycosis - Louisiana, 1990-2021

