

Blastomycosis

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

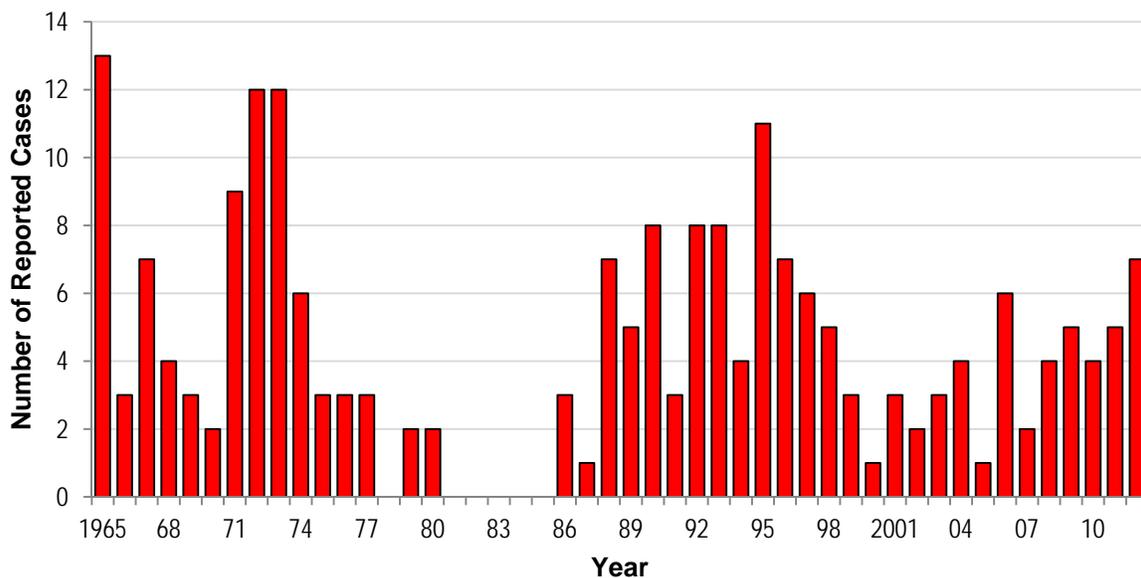
Blastomycosis is caused by the fungus *Blastomyces dermatitidis*. Infection is acquired through inhalation of conidia from soil. About half of those infected with blastomycosis will experience symptoms, which are similar to flu symptoms, including fever, chills, cough, muscle aches, joint pain, and chest pain. Blastomycosis can, in some cases, disseminate to other parts of the body including skin and bones. The organism originates in the environment and 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.

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

Figure 1: Blastomycosis cases - Louisiana, 1966-2012

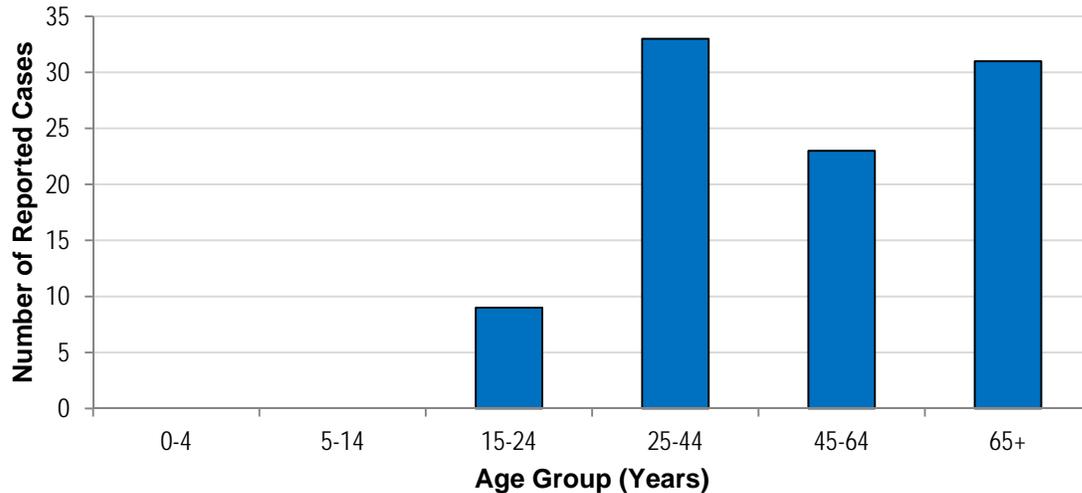


Blastomycosis also occurs sporadically in dogs in Louisiana, particularly in large breeds that live close to large bodies of water. The southeastern United States and the Mississippi and Ohio River Valleys report the highest incidence of canine cases in the United States.

Sex, Race and Age

Of cases reported in Louisiana since 1992, 58% were male. Thirty-four percent of reported cases since 1992 were White, 36% were Black; race was unknown for 29%. The majority of cases in Louisiana occur among people 25 years of age and older (Figure 2).

Figure 2: Blastomycosis cases by age - Louisiana, 1992-2012



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 other parishes (Table).

Table: Blastomycosis cases and incidence (per 100,000) population by parish
Louisiana, 1992-2012

Region	Parish	1992-2012 Cases	1992-2012 Incidence	Region	Parish	1992-2012 Cases	1992-2012 Incidence
1	Jefferson	8	0.1	6	Concordia	2	0.5
	Orleans	2	0.0		Grant	0	0.0
	Plaquemines	0	0.0		La Salle	0	0.0
	St. Bernard	0	0.0		Rapides	0	0.0
2	Ascension	3	0.0		Vernon	0	0.0
	E. Baton Rouge	0	0.0		Winn	0	0.0
	E. Feliciana	2	0.5	7	Bienville	2	0.6
	Iberville	0	0.0		Bossier	1	0.1
	Pointe Coupee	1	0.1		Caddo	5	0.1
	W. Baton Rouge	1	0.1		Claiborne	5	1.4
W. Feliciana	0	0.0	De Soto		0	0.0	
3	Assumption	0	0.0		Natchitoches	1	0.1
	Lafourche	0	0.0		Red River	0	0.0
	St. Charles	2	0.2		Sabine	0	0.0
	St. James	2	0.2		Webster	2	0.2
	St. John	0	0.0		8	Caldwell	1
	St. Mary	3	0.7	E. Carroll		0	0.0
	Terrebonne	1	0.0	Franklin		0	0.0
4	Acadia	0	0.0	Jackson		0	0.0
	Evangeline	0	0.0	Lincoln		3	0.9
	Iberia	0	0.0	Madison		4	0.5
	Lafayette	2	0.0	Morehouse		1	0.4
	St. Landry	1	0.1	Ouachita		0	0.0
	St. Martin	0	0.0	Richland		5	0.2
	Vermilion	0	0.0	Tensas		1	0.2
5	Allen	1	0.2	Union	2	0.4	
	Beauregard	0	0.0	W. Carroll	0	0.0	
	Calcasieu	1	0.0	9	Livingston	1	0.0
	Cameron	0	0.0		St. Helena	0	0.0
	Jefferson Davis	1	0.2		St. Tammany	7	0.2
6	Avoyelles	0	0.0		Tangipahoa	9	0.4
	Catahoula	1	0.4		Washington	13	1.4

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.

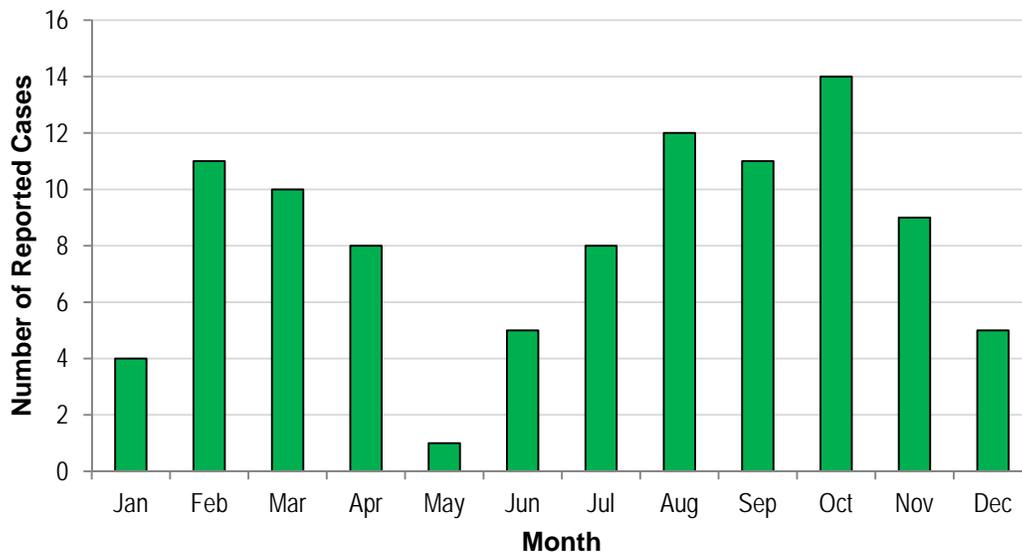
Among the 30 cases detected in Washington Parish, the age range was three weeks to 81 years. Five cases died; of these, one was an infant who may have been infected in utero and another was an adult who developed clinical symptoms compatible with adult respiratory distress syndrome. There was no geographic 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

While blastomycosis infections occur throughout the year in Louisiana, there is a three-month peak from August to October (Ratchet circular scan test, $p < 0.05$) (Figure 3).

Figure 3: Seasonality for blastomycosis - Louisiana, 1992-2012



Mortality

Out of 99 cases reported since 1992, there have been 12 deaths. These deaths occurred in adults ranging from 35 to 82 years of age.

Hospitalizations

Hospitalization surveillance is based on the Louisiana Inpatient Hospital Discharge Data (LaHIDD). In 1997, the Louisiana legislature mandated the reporting of hospital discharge data. LaHIDD serves as the state registry containing hospital discharge data submitted to the Department of Health and Hospitals (DHH). The Office of Public Health (OPH) is responsible for making the data available to OPH sections as needed. The data is available with a delay of two years. Repeat hospitalizations are not included. The Infectious Disease Epidemiology Section uses these data sets for the surveillance of infectious diseases in hospitals. LaHIDD data sets contain demographic information (names, gender, age, date of birth, address, admit diagnosis, discharge diagnoses (main plus eight more diagnoses), procedures (main plus five), charges, length of stay and hospital name. The diagnoses and procedures have ICD-9 codes. Records of patients with Blastomycosis were extracted using the following ICD9 codes whether in the main diagnosis or in the eight additional secondary diagnoses:

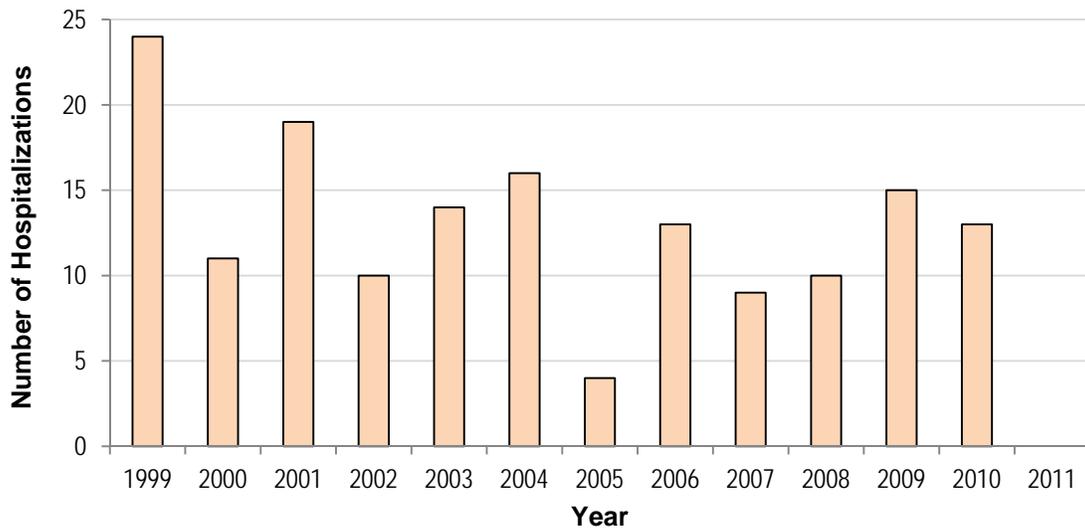
<u>CODE</u>	<u>DISEASE</u>
116	BLASTOMYCOTIC INFECTION
116.0	BLASTOMYCOSIS
117.2	CHROMOBLASTOMYCOSIS

The following statistics are based on unduplicated patients.

Hospitalization Numbers, Rates and Trends

There is an average of 12 hospitalizations per year in Louisiana from 1999 to 2011. (There were no hospitalizations recorded for 2011) (Figure 4).

Figure 4: Blastomycosis hospitalizations - Louisiana, 1999-2011



Mortality

There were 10 deaths in Louisiana's hospital discharge database from 1999 to 2011 with blastomycosis as one of the eight documented diagnoses.