



**Arkansas Department  
of Health  
Fungal Diseases  
Surveillance Summary  
2012-2022**

# Blastomycosis



Blastomycosis is a fungal infection caused by *Blastomyces* species *dermatitidis* and *gilchristii*. Infections occur when someone inhales spores, which like to reside in damp soil near fresh water. Blastomycosis is the second most common fungal disease in Arkansas and is endemic to the midwest and southeastern United States. Most people exposed to blastomycosis will not get sick, but elderly or immunocompromised individuals are most likely to develop mild to severe disease. Confirmation of diagnosis is achieved through antigen/antibody tests, PCR, or fungal culture.

Symptoms usually appear within 3 to 15 weeks after exposure. The most common symptoms include fever, cough, night sweats, muscle aches or joint pain, weight loss, chest pain, fatigue, and skin lesions (blisters or ulcers).

Human to human transmission has not been documented. Dog and cats are susceptible to disease, but it is not infectious between animals or humans. In extremely rare cases, blastomycosis can spread from infected animals through needlestick injuries or bites.

Most blastomycosis infections will require antifungal treatment. Itraconazole is the most common medication used for mild to moderate infections. For severe infections, amphotericin B is typically used. Duration of treatment will depend on severity of disease, and can range from six months to one year.



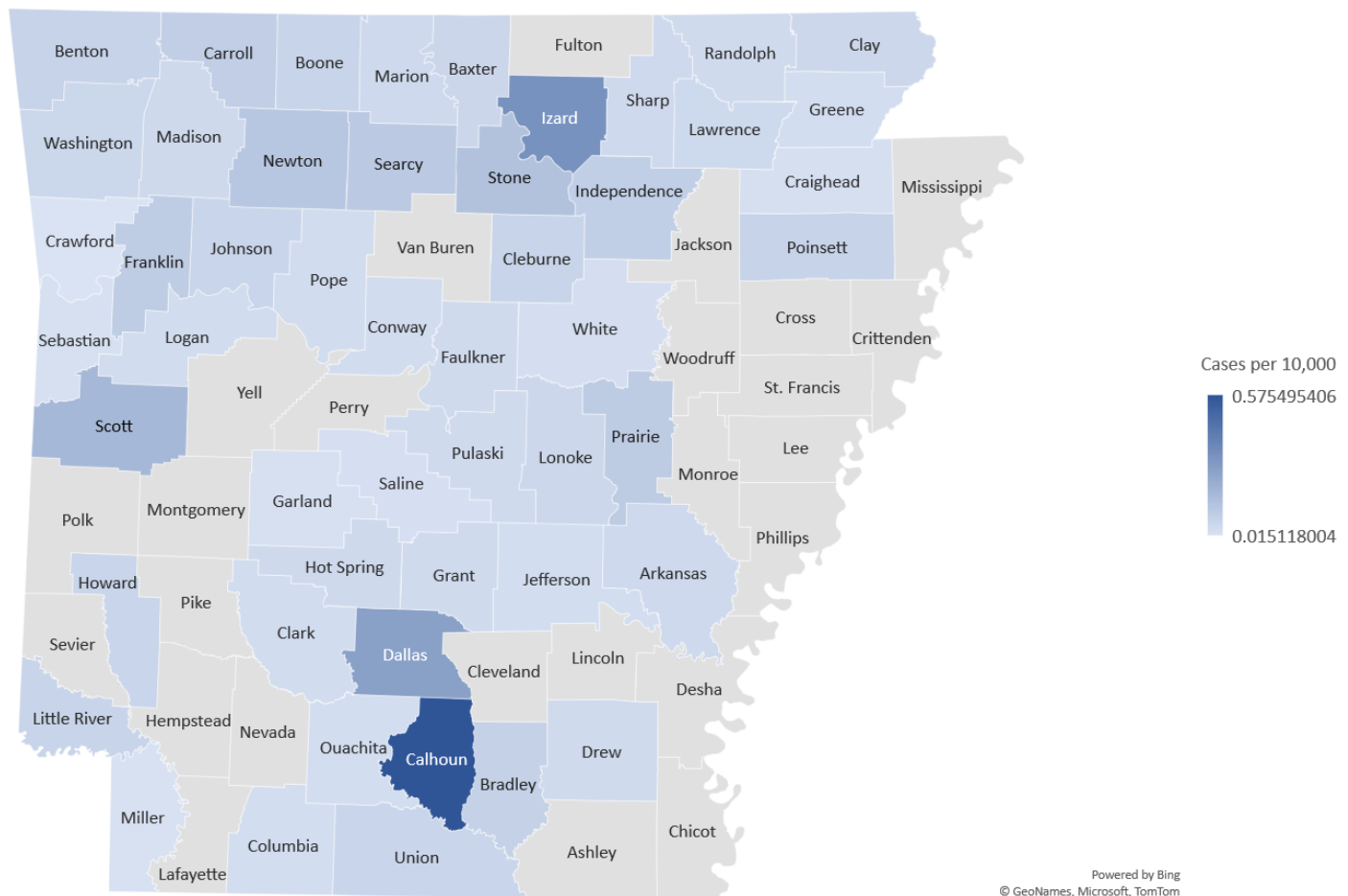
Figure 1. Endemic geographic distribution of *Blastomyces* in the United States (CDC).

# Blastomycosis



The counties that reported the most cases of blastomycosis from 2012 to 2022 were Benton (24), Pulaski (23), Washington (17), and Faulkner(7). When adjusted for population, Calhoun county reported the highest average annual incidence of cases per capita. In Calhoun County, 66% of cases were women from 2012-2022.

**Average Annual Incidence of Blastomycosis by County, 2012-2022 (n=165)**



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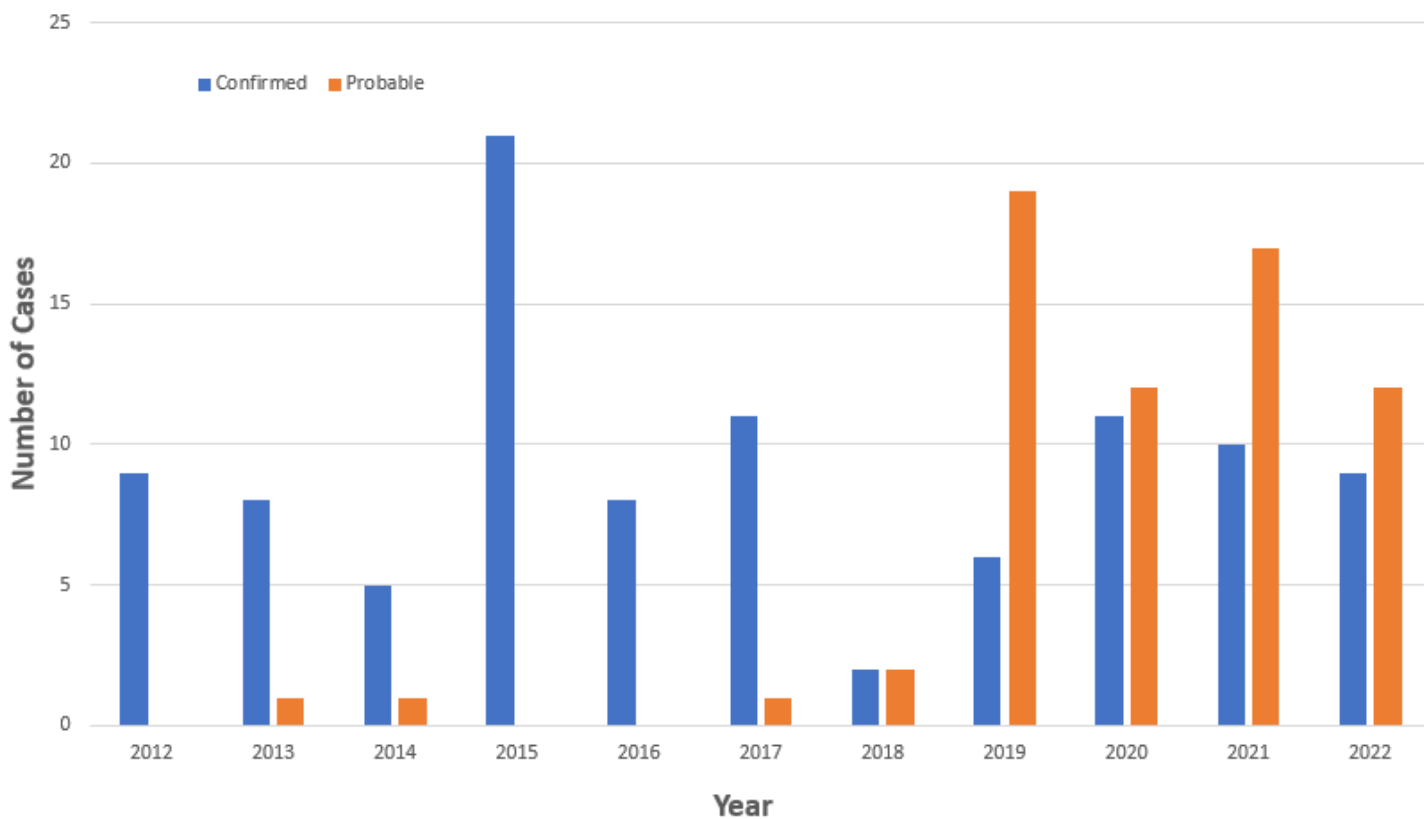
Unpublished aggregate data from the Arkansas Department of Health

# Blastomycosis



The average number of blastomycosis cases reported in Arkansas per year is 15, with the highest number of cases reported in 2021 (27). In 2021, Benton County reported 25% (7) of cases for that year. In Benton county, 66% of cases were male for the year 2021. Arkansas averaged 0.5 cases per 100,000 people a year between the years 2012 to 2022.

**Blastomycosis Cases in Arkansas by Year,  
2012-2022 (n=165)**



In 2020, the Council for State and Territorial Epidemiologist (CSTE) developed a standardized case definition for blastomycosis. In 2022, the Arkansas Department of Health reviewed cases from 2018-2022 with this case definition.

# Blastomycosis



From 2012 to 2022 there were 332 cases investigated, 100 were confirmed and 65 were probable. The median age of these cases was 51 years (range, 2 to 87), while 42.4% of cases were between the ages of 40 to 64; 113 (68.5%) were male, of the 121 cases with race reported, 92 (76%) were white, 26 (21.5%) were black, and 2 (1.7%) were Native Hawaiian/Pacific Islander. Of the 114 that reported ethnicity, 8 (7%) were Hispanic or Latino.

Table 1. Demographic data for blastomycosis cases in Arkansas, 2012-2022.

<b>Gender</b>		<b>No (%)</b>
	Male	113 (68.5)
	Female	52 (31.5)
<b>Age</b>		
	<5 years	1 (<1)
	5 to 19	18 (10.9)
	20 to 39	39 (23.6)
	40 to 64	70 (42.4)
	65 to 79	32 (19.4)
	80 +	5 (3.0)
<b>Median Age (range)</b>		
		51 (2-87)
<b>Race (n=121)</b>		
	White	92 (55.8)
	Black	26 (15.8)
	Asian	1 (<1.0)
	Native Hawaiian/Pacific Islander	2 (1.7)
<b>Ethnicity (n=114)</b>		
	Hispanic or Latino	8 (7.0)
	Non-Hispanic or Latino	106 (93)
<b>Case Status (n=165)</b>		
	Confirmed	100 (60.6)
	Probable	65 (39.4)

# Histoplasmosis



Histoplasmosis is a fungal infection caused by *Histoplasma capsulatum*, which is typically found in soil enriched from bird and bat droppings. Histoplasmosis is the most common fungal disease in Arkansas and is endemic to central and eastern regions of the United States, as well as other various parts of the world. Infection typically occurs from inhaling spores, but cutaneous infections, while rare, may occur from open wounds exposed to spores. Most cases are mild, but severe disease can occur in elderly, immunocompromised, or individuals exposed to an excessive number of spores. Diagnosis can be difficult due to non-specific symptoms, and can be diagnosed through fungal cultures, antibody/antigen tests, and lung imaging.

Symptoms of disease typically present 3-14 days after exposure to fungal spores. Human-to-human transmission has not been documented.

The most common clinical findings of histoplasmosis infection are fever, cough, fatigue, chills, headache, chest pain, and body aches. Other clinical findings include enlarged lymph nodes, pulmonary infiltrates, gastrointestinal ulcerations or masses, skin or mucosal lesions, pancytopenia, enlargement of liver, spleen, meningitis, encephalitis, or focal brain lesions.

The treatment of histoplasmosis typically involves antifungal medications such as itraconazole or amphotericin B, which can be taken orally or given intravenously. The duration of treatment depends on the severity of the infection, ranging from a few weeks to several months

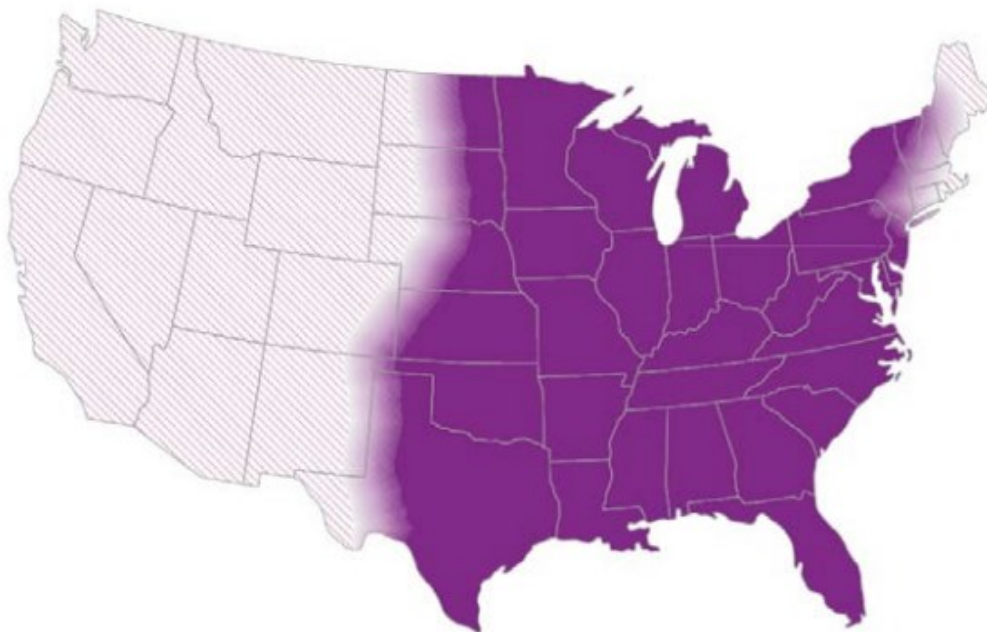


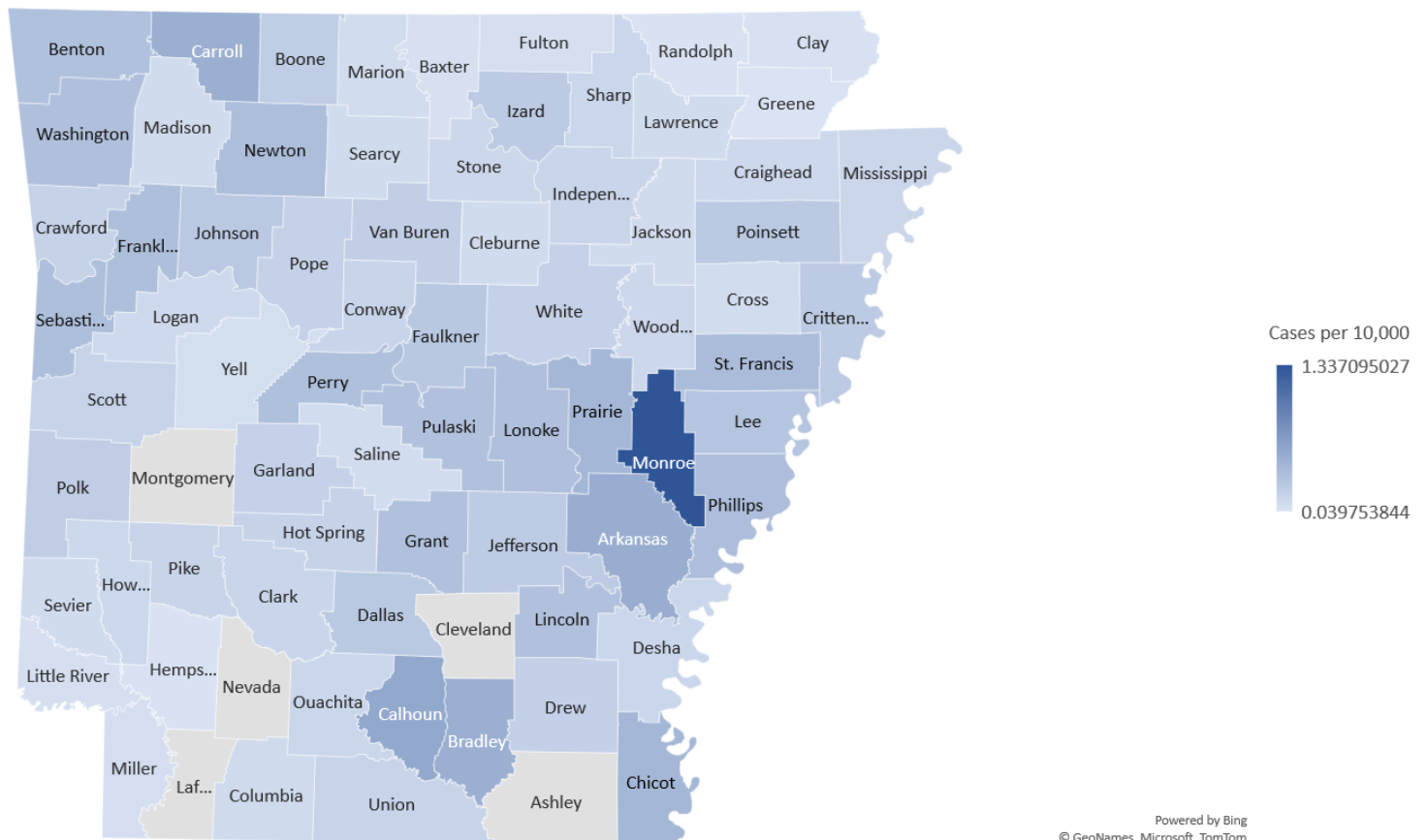
Figure 1. Endemic geographic distribution of Histoplasmosis in the United States (CDC).

# Histoplasmosis



The counties that reported the most cases of histoplasmosis between the years of 2012 to 2022 were Pulaski (154), Benton (111), and Washington (97). When adjusted for population, Monroe County reported the highest average annual incidence of cases per capita, followed by Calhoun and Arkansas counties. In Monroe county, 70% of cases were male which is 10% higher than the 10 year average for the state.

**Average Annual Incidence of Histoplasmosis by County, 2012-2022 (n=846)**



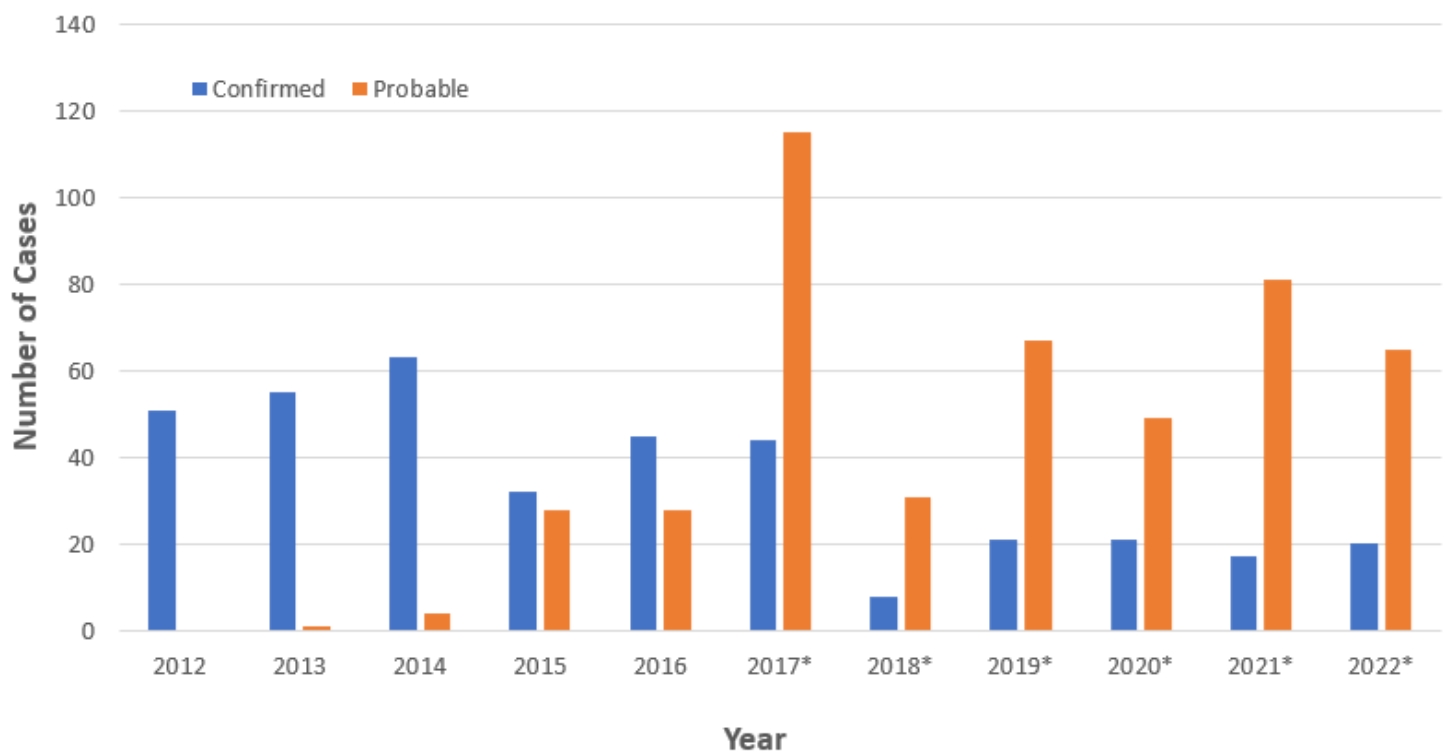
Unpublished aggregate data from the Arkansas Department of Health

# Histoplasmosis



The average number of histoplasmosis cases reported per year in Arkansas is 76.9, with the highest number of cases being reported in 2017 (159). In 2017, cases from Washington and Benton County accounted for 45% (72) of all reported cases for that year. Arkansas averaged 2.6 cases per 100,000 people a year between the years 2012 to 2022.

## Histoplasmosis Cases in Arkansas by Year, 2012-2022 (n=846)



\* In 2017, a new CSTE case definition for histoplasmosis was implemented.  
Unpublished aggregate data from the Arkansas Department of Health



# Histoplasmosis



From 2012 to 2022 there were 846 cases investigated, 377 (44.6%) were confirmed and 469 (55.4%) were probable. The median age of cases was 51 years (range, 1 to 87), while 36.5 % of cases were between the ages of 40 to 64; 508 (60.2%) were male. Of the 594 cases that reported race, 448 (75.4%) were white, 128 (21.5%) were black. Of the 613 cases that reported ethnicity, 32 (5.2%) were Hispanic or Latino.

Table 2. Demographic data for histoplasmosis cases in Arkansas, 2012-2022

<b>Gender (n=846)</b>		<b>No. (%)</b>
	Male	508 (60.2)
	Female	336 (39.8)
<b>Age</b>		
	<5 years	6 (<1)
	5 to 19	117 (13.8)
	20 to 39	187 (22.1)
	40 to 64	309 (36.5)
	65 to 79	183 (21.6)
	80+	42 (4.7)
<b>Median Age (range)</b>		
		51 (1-88)
<b>Race (n=594)</b>		
	White	448 (75.4)
	Black	128 (21.5)
	Asian	12 (2.0)
	Native Hawaiian/Pacific Islander	4 (<1.0)
	Native American	2 (<1.0)
<b>Ethnicity (n=613)</b>		
	Hispanic or Latino	32 (5.2)
	Non-Hispanic or Latino	581 (94.8)
<b>Case Status (n=846)</b>		
	Confirmed	377 (44.6)
	Probable	469 (55.4)

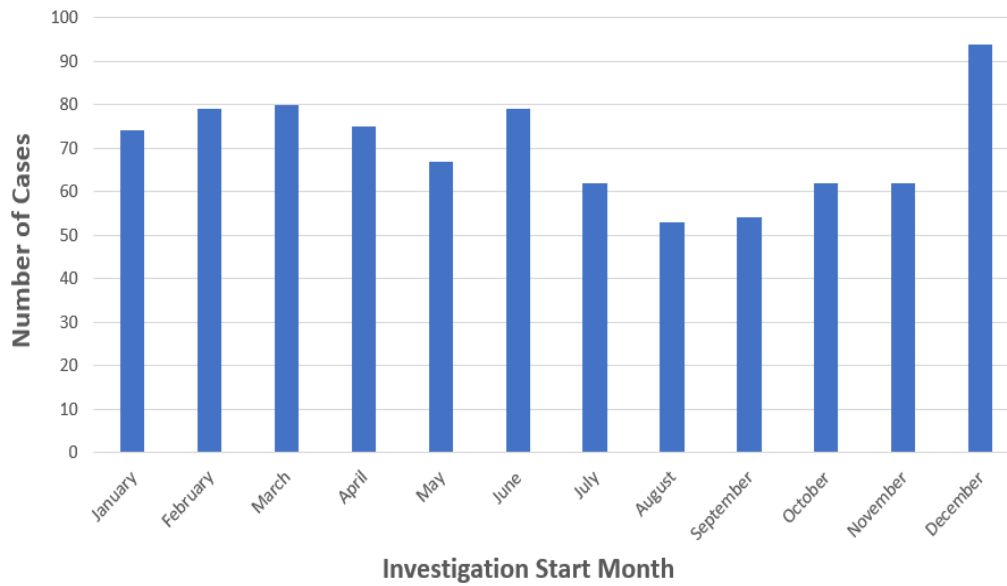
Unpublished aggregate data from the Arkansas Department of Health

# Seasonality



Currently, there is no seasonality for histoplasmosis infections. For other states where blastomycosis is reportable, cases are more commonly reported in the fall and winter.

**Histoplasmosis Cases in Arkansas by Investigation Start Month, 2012-2022 (n=841)**



**Blastomycosis Cases in Arkansas by Investigation Start Date, 2012-2022 (n=165)**



Unpublished aggregate data from the Arkansas Department of Health

# Coccidioidomycosis



Coccidioidomycosis, also known as Valley fever, is caused by *Coccidioides* spp. (*C. immitis* and *C. posadasii*), an environmental fungus endemic to the western United States, parts of Mexico, and Central and South America. Over 95% of U.S. cases have been reported from Arizona and California. It is typically acquired by inhalation of airborne spores. Approximately 40% of infected persons develop symptomatic infection, typically of the lungs, with the most common symptoms being fatigue, cough, fever, shortness of breath, and headache (CDC). Severe or chronic pulmonary disease occurs in some people, and disseminated disease is thought to occur in about 1% of people, spreading most commonly to the central nervous system, bones, joints, or skin (CDC). Cases in Arkansas are usually travel associated. Valley fever is a nationally notifiable disease.

Symptoms appear between one to three weeks after exposure and can last for a few weeks to a few months. The most common symptoms of valley fever include cough, fever, shortness of breath, chest or flank pain, headache, weight loss, myalgia, arthralgia, and fatigue. Human to human transmission is not common. The infection cannot spread from the lungs of an infected person to another. In some rare instances, a wound infection can spread from person to person or from an infected organ through organ transplant. Dogs and cats are susceptible to infection but cannot spread the disease to humans.

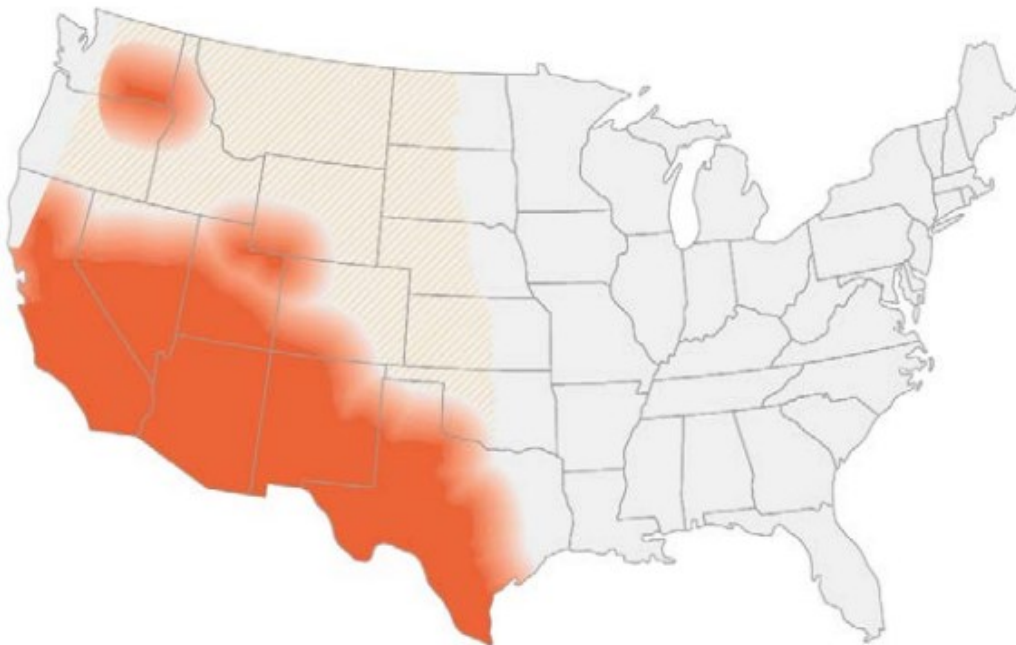


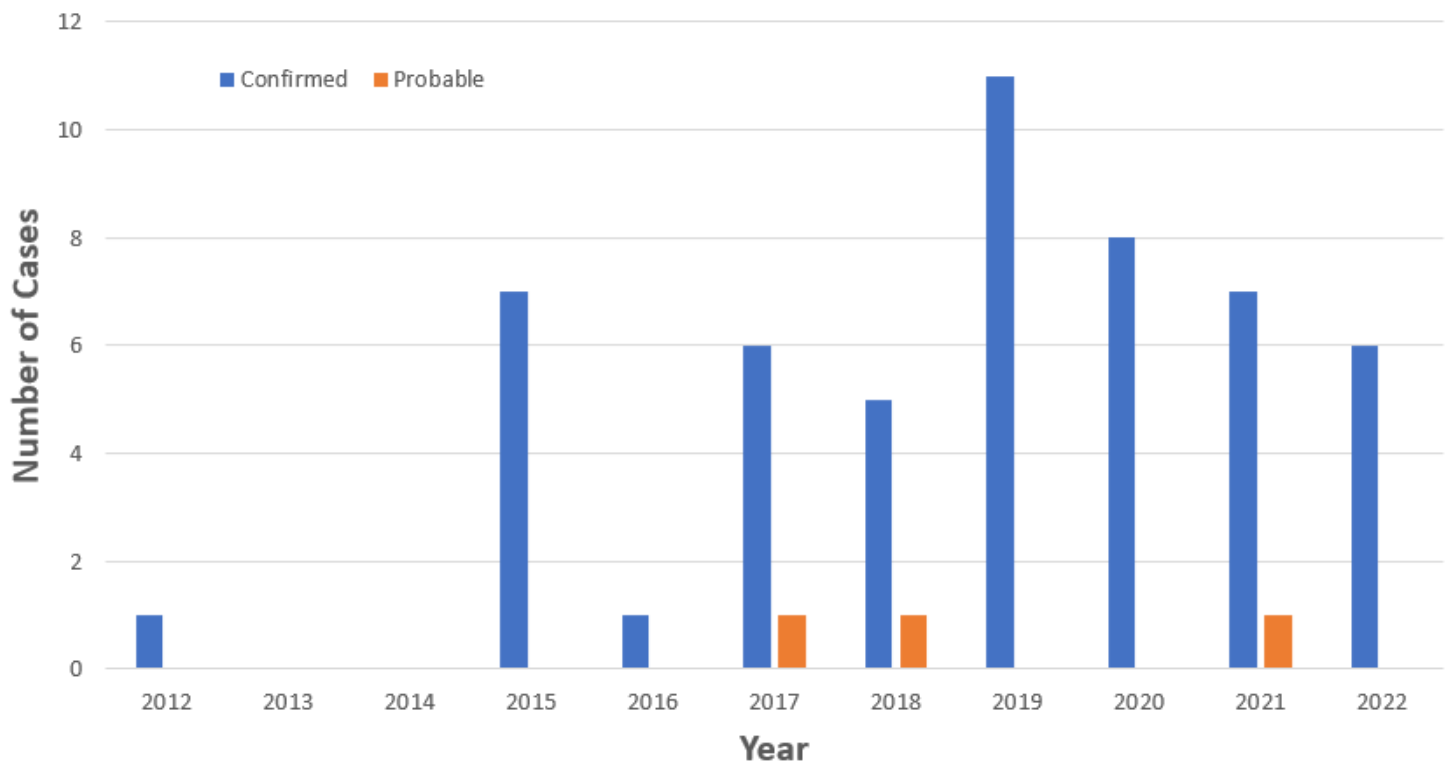
Figure 3. Endemic geographic range of coccidioidomycosis in the United States (CDC). Dark shaded areas are current known areas of endemicity, while diagonal shading shows potential range of coccidioides.

# Coccidioidomycosis



Arkansas falls under low-incidence jurisdiction for the CSTE case definition. A person may only be considered a case once in their lifetime for one state. Cases in Arkansas are typically acquired from travel to endemic areas.

**Coccidioidomycosis Cases in Arkansas by Year,  
2012-2022 (n=55)**



Unpublished aggregate data from the Arkansas Department of Health