

## Hantavirus Pulmonary Syndrome

*Hantavirus Pulmonary Syndrome is a Class B Disease and must be reported to the state within one business day.*

Hantavirus pulmonary syndrome (HPS) is a febrile illness characterized by clinical symptoms resembling acute respiratory distress syndrome (ARDS). Infection is also characterized by fever, myalgias and GI complaints. In more severe cases, patients may develop severe pulmonary edema and hypotension. Patients may progress, although rarely, to disseminated intravascular coagulation (DIC). Asymptomatic illness is rare, but recently several less severe respiratory presentations have been described.

Hantavirus pulmonary syndrome can be caused by one of more than twenty-five antigenically distinguished viral species, each associated primarily with a single rodent species. The rodent hosts are usually not associated with urban environments, although several may enter human dwellings in rural or suburban areas.

The primary risk factor for hantavirus exposure is rodent infestations in and around the home. Occupational exposures have been recognized, but are rare. Humans acquire infection primarily through inhalation of infectious aerosolized rodent saliva or excreta. Person-to-person transmission has never been associated with HPS cases in the United States. Nevertheless, universal precautions are recommended due to evidence of person-to-person transmission of a related virus in South America.

Hantavirus pulmonary syndrome is often referred to as an emerging infectious disease. The disease was first identified in 1993, but evidence exists of a confirmed Sin Nombre virus infection in 1959, with signs compatible with HPS.

Hantaviral infections are rarely reported in Louisiana. Several cases have been caused by a unique hantavirus named Bayou virus. The Bayou virus infection is characterized by Hantavirus pulmonary syndrome with renal insufficiency and intra-alveolar hemorrhage (resembling hemorrhagic fever with renal syndrome (HFRS) associated with a family of Eurasian hantaviruses). The primary reservoir for the virus is thought to be the rice rat, *Oryzomys palustris*. (Table 1)

Table 1: Most common hantaviruses known to cause HPS and the associated rodent reservoir, United States

Virus Name	Rodent Species
Sin Nombre	Deer mouse ( <i>Peromyscus maniculatus</i> )
New York	White footed mouse ( <i>Peromyscus leucopus</i> )
Black Creek Canal	Cotton rat ( <i>Sigmodon hispidus</i> )
Bayou virus	Rice rat ( <i>Oryzomys palustris</i> )

Several other Hantaviruses associated with specific rodent species also have been identified. HPS is present only in the Americas. HFRS is primarily an Old World disease. Since 2005, there have been very few Hantavirus cases reported in Louisiana. (Table 2)

Table 2: Hantavirus cases – Louisiana, 2005-2015

Yr	Mo	Sex	Age	Parish	Hospitalized	Deceased	Exposure
2005	10	M	63	Jeff Davis	ICU	N	Barn at home infested with mice
2007	04	M	48	Lafayette	ICU	Y	
2007	11	M	35	Sabine	ICU	N	Trailer in oil field infested with mice, Houston
2008	02	M	22	Calcasieu	ICU	N	Lodge in CO infested with mice; two friends from same trip suspected
2008	05	F	53	Caddo	ICU	N	
2013		M	51	Avoyelles	ICU	N	School teacher. Cleaned out an office area at high school that had a lot of rat/mouse droppings