

Hantavirus Infection (including Pulmonary Syndrome)

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

Hantavirus pulmonary syndrome (HPS) became nationally notifiable in 1995. HPS is a febrile illness characterized by clinical symptoms resembling acute respiratory distress syndrome (ARDS) or bilateral diffuse interstitial edema. Infection is also characterized by a relatively short febrile prodrome, myalgias, headache, chills, dizziness, non-productive cough and gastrointestinal (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.

Non-HPS infection is considered to be a febrile illness with non-specific viral symptoms including fever, chills, myalgia, headache and GI symptoms but no cardio-pulmonary symptoms. Non-HPS infections typically also have clinical laboratory findings including hemoconcentration, left shift in WBC count, neutrophilic leukocytosis, thrombocytopenia and circulating immunoblasts. In 2014, surveillance expanded to include reporting of all laboratory confirmed hantavirus infections (HPS and non-pulmonary hantavirus infection).

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.

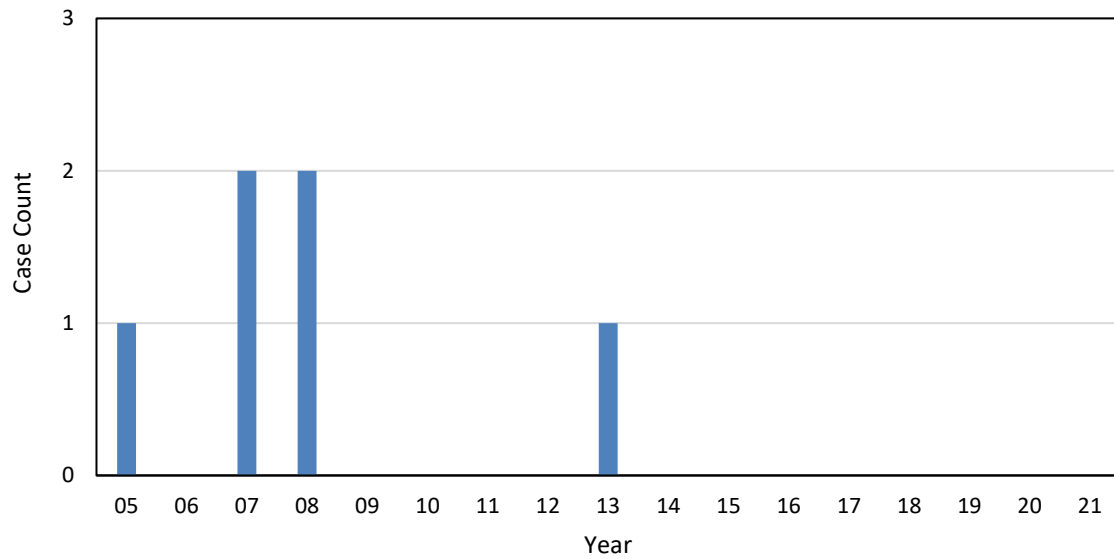
Hantaviral infections are rarely reported in Louisiana. Several cases have been caused by a unique hantavirus named Bayou virus. The Bayou virus infection is characterized by Hantavirus pulmonary syndrome with renal insufficiency and intra-alveolar hemorrhage (resembling hemorrhagic fever with renal 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. Since 2005, there have been six Hantavirus cases reported in Louisiana (Figure 1). Most cases have been associated with rat or mouse-infested buildings. Four of the six cases reported in Louisiana had exposure outside of the state.

Figure 1. Reported Hantavirus Cases in Louisiana, 2005 - 2021



Differences in viruses in the U. S. complicate the use and sensitivity of RT-PCR for the routine diagnosis of hantaviral infections. A number of IgM positive (IgG negative) samples may represent false positive reactivity associated with other viral infections.