

Hantavirus Infection Louisiana, 2013

A recent (2013) case of Hantavirus Pulmonary Syndrome (HPS) is a reminder that this disease does occur in Louisiana, although it is rare.

Case History

A 51-year-old school teacher started having high fever and pulmonary symptoms. He was quickly hospitalized, one day after onset. His chest x-ray showed bilateral interstitial pulmonary infiltrates and low oxygen saturation, all suggestive of Acute Respiratory Distress Syndrome (ARDS). At the beginning of illness, HPS is indistinguishable clinically from numerous other viral infections. Often the only guide to the etiology of the patient's illness is the blood picture.

This patient had all the hematologic characteristics of HPS - particularly progressive thrombocytopenia (low platelet count). Thrombocytopenia is one of the most consistent laboratory findings in HPS, occurring in virtually all patients and frequently present early in the infection; it has been shown to be highly discriminatory between patients with HPS and those with other febrile illnesses.

Other important hematologic abnormalities include:

- a leukocytosis (high white blood cell count) with a left-shift and immunoblasts ("left-shift" refers to the presence of increased proportions of younger, less well differentiated neutrophils)
- neutrophil-precursor cells in the blood reflecting a premature release of myeloid cells from the bone marrow)
- hemo-concentration (high hematocrit).

This tetrad (thrombocytopenia, left shift, circulating immunoblasts, and hemoconcentration) is seldom seen in other viral infections.

This very typical clinical presentation (and a history of cleaning a room full of rat feces) were strongly indicative of HPS for the patient. Serology was requested and results confirmed the diagnosis of HPS. The case was confirmed by positive serologic results for IgM and IgG by an Immuno-Blot test utilizing an envelope antigen. The case was further confirmed by the Centers for Disease Control and Prevention (CDC) by genetic sequencing data as having been infected by the Bayou Virus.

The treatment was supportive and the patient recovered.

Epidemiology

HPS can be caused by one of more than 25 antigenically distinguished viral species, each associated primarily with a single rodent species. One of the most well-known of these is the Sin Nombre virus (SNV). Bayou virus is another hantavirus, first described in Louisiana in 1993. The rodent hosts are usually not associated with urban environments, although several may enter human dwellings in rural or suburban areas.

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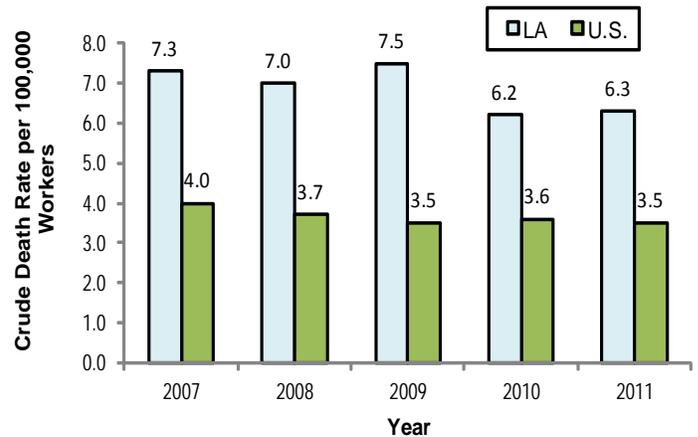
Fatalities In The Construction Industry - Louisiana, 2007-2011

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The Louisiana Department of Health & Hospital's (DHH) Occupational Health & Injury Surveillance Program focuses on identifying workers at high risk for occupational injuries and illnesses, and providing data to reduce occupational injuries and diseases through targeted preventive measures. An important data source in this effort is the Census of Fatal Occupational Injuries (CFOI), a comprehensive national surveillance system for work-related fatalities in the United States

CFOI data show that Louisiana's fatal occupational injury rate remains consistently greater than the U.S. rate, as well as more than many other states (Figure 1).

Figure 1: Rates of Fatal Occupational Injuries Per 100,000 Workers Louisiana and United States, 2007-2011



The death rates per 100,000 workers comparison between Louisiana and the U.S. may be due to several reasons, one being the lack of adjustment by industry. Fatal injuries vary by industry;

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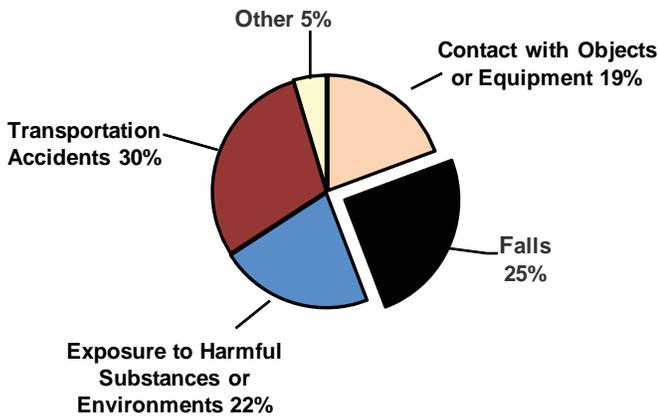
high-risk industries include agriculture, mining (including oil and gas), transportation, and construction.

Between 2007 and 2011, there was an average of 125 work-related deaths per year in Louisiana. About one-fifth of these deaths occurred in the construction industry. CFOI classifies each fatal event or exposure into one of six causes of death categories:

- transportation accidents
- contact with objects or equipment
- exposure to harmful substances or environments
- falls
- assaults/violent acts
- fires/explosions.

Approximately one-quarter of the fatalities in the construction industry were due to falls (Figure 2). Most fatal falls are a fall to a lower level such as a fall from a roof, scaffold or ladder.

Figure 2: Fatal Occupational Injuries by Cause of Death - Construction Industry – Louisiana, 2007-2011.



- Other includes two categories: Assaults/Violent Acts and Fires / Explosions.
- Transportation accidents exclude commuting to and from work.
- Exposure to harmful substances or environments includes contact with chemicals, electrocution, extreme temperatures, oxygen-depleted spaces and drowning.

The Occupational Health and Safety Administration (OSHA) investigates all work-related fatalities and disasters. Federal law requires that within eight hours after the work-related death of any employee, or the in-patient hospitalization of three or more employees, employers must orally report the fatality/multiple hospitalization by telephone, or in person to the nearest OSHA Office or State.

Descriptions of eight fall fatalities occurring in Louisiana were selected from OSHA’s fatality database.

- A worker picking up trash on a building roof died after falling more than 20 feet and hitting a trash dumpster.
- A worker was on a platform that collapsed, falling 25 feet.
- A worker, during the repair/construction of building gutters, fell through a mechanical lift.
- A construction worker died after falling 12 feet from a ladder.

- A worker installing shingles on a roof, died when he fell nearly 20 feet to the ground.
- A sheet metal worker died from head injuries after falling from a ladder.
- A worker was climbing a ladder on a scaffold to start dismantling it when he fell from the ladder approximately 42 feet to the ground.
- A worker was repairing a roof installation and fell 14 feet to the ground.

Falls can be prevented and lives can be saved through three simple steps: plan, provide and train. The National Institute for Occupational Safety and Health (NIOSH) & OSHA are part of a nationwide outreach campaign to raise awareness among workers and employers about the hazards of falls.

Please Visit OSHA’s website at osha.gov/stopfalls for posters, training materials and more information about how to be a partner in the campaign. For more information on the Louisiana DHH, Office of Public Health, Section of Environmental Epidemiology & Toxicology/Occupational Health & Injury Surveillance Program, visit seet.dhh.la.gov.

Louisiana Fact

The Cocktail’s Link to Medicine

Peychaud’s Bitters was originally created around 1830 by Antoine Amédée Peychaud, a French planter and pharmacist, who emigrated from the French colony of Saint-Domingue, now Haiti, in 1793 to New Orleans. These bitters were thought to have healing properties. In his apothecary shop at 437 Royal Street, he would add a few drops of brandy to the bitters in a double-ended eggcup called a coquetier (kah-kuh-TYAY), which was said to have derived over the years to the word ‘cocktail’. Peychaud’s Bitters is an important component of the Sazerac cocktail, said to be America’s first ‘branded cocktail’ invented pre-1850 in New Orleans.

One of Peychaud’s main ingredients was gentian known from 180 B.C. near the European area now known as Albania. The botanical name of gentian is derived from Gentius, an ancient botanist and King of Illyria (180-167 B.C.), who discovered its medicinal value. Gentian was commonly employed as an antidote to poison, for stomach problems and to expel worms and kill plasmodia (organisms that cause malaria), and was thought to be more effective than quinine in some parts of the world. Gentian root is classified as the standard bitter, and the rest are measured against it.



Photo: Courtesy of the Sazerac Company, Inc.