

01-424

disease prevention news

Hantavirus Pulmonary Syndrome Cases in Texas

Two cases of hantavirus pulmonary syndrome (HPS) were diagnosed in Texas in 2000, for a total of 15 cases statewide since the first case occurred in 1993 (Figure 1). The Sin Nombre virus (SNV) was identified as the etiologic agent in both cases. Both patients were hospitalized and survived.

Lubbock County's first case of HPS occurred in March 2000 in the city of Lubbock. A 12-year-old girl was in good health until 4 days prior to admission, when she developed chills, a cough, and fever. She was taken to the emergency department (ED) on March 14 following shortness of breath that lasted 1 hour.

Upon arrival at the ED, the patient was able to maintain oxygen saturations above 92% on room air, but was tachypneic and hypotensive. She had 2 episodes of syncope, 1 after receiving 1 liter of fluid. The girl was admitted to the Pediatric Intensive Care Unit and immediately received 2 liters of oxygen by nasal cannula.

Diffuse bilateral pulmonary infiltrates were observed on chest x-ray. Worsening blood gas levels, an increased oxygen requirement and respiratory rate, and progressive respiratory decompensation led to intubation with mechanical ventilation from March 14 to March 21, 2000.

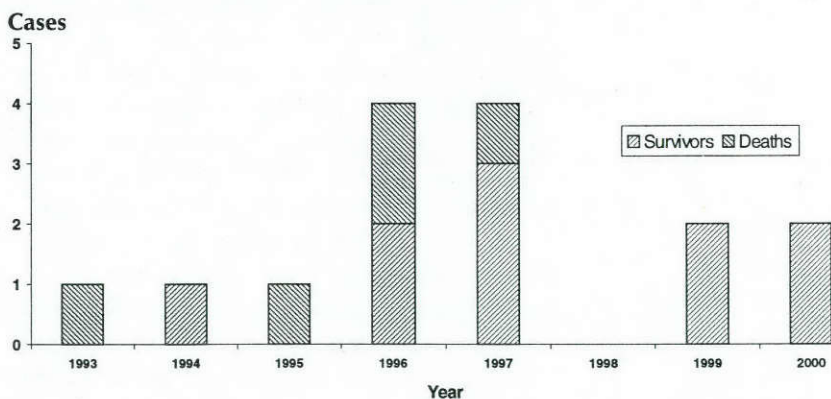
A thoracic radiograph on March 16 showed a large pleural effusion on the patient's right side requiring thoracentesis with approximately 700 cc of serosanguinous fluid removed. To manage recurrent pleural effusions, a chest tube was placed on March 17. Ventilator settings were decreased on the 18th, and the tube was uneventfully removed on the 21st.

During her first 3 days of hospitalization, the patient's temperature was consistently over 103° F, with 103.8° F as the highest recorded. The patient developed anemia requiring transfusion, thrombocytopenia (51,000 mm³) that resolved without intervention, and a left-shift in the white blood cell count with 15 percent bands. Renal functioning remained normal.

Therapy with ceftazidime, azithromycin, gentamycin, and vancomycin was initiated for possible bacterial pneumonia. Negative blood and bronchial washing cultures on day three resulted in cessation of all antibiotics but azithromycin, which was continued for possible Mycoplasma etiology.

The patient's serum was tested for antibodies to Mycoplasma and hantaviruses. On March 20 her serum was reported to have IgG (1:400) and IgM (>1:6400) reactivity to antigens for SNV and administration of azithromycin ceased. The patient was discharged from the hospital on March 23 and has made a full recovery.

Figure 1. Confirmed HPS Cases in Texas by Year, 1993-2000



The source of this patient's exposure to SNV was probably rodent droppings in the living quarters, which were located in a semi-rural area near grain and cotton storage facilities. Contact with a dead mouse in the home on January 31, 2000, was reported.

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Figure 2. Demographics for HPS Cases in Texas: 1993—2000

	Cases (%)	Survivors (%)	Deaths (%)
Age range	14-58 —	14-54 —	15-58 —
Mean age	34 —	34 —	35 —
Outcome	15 —	10 (67)	5 (33)
Male	9 (60)	6 (60)	3 (60)
Age range	16-54 —	16-54 —	15-50 —
Mean age	34 —	36 —	50 —
Outcome	9 —	6 (67)	3 (33)
Female	6 (40)	4 (40)	2 (40)
Age range	14-58 —	14-51 —	26-58 —
Mean age	34 —	30 —	42 —
Outcome	6 —	4 (67)	2 (33)

In May 2000 the second case of HPS was diagnosed in a 26-year-old, asplenic, nonsmoking female from Randall County in the Texas Panhandle. After 4 to 5 days of increasing shortness of breath, pleuritic pain, fever, malaise, and myalgias, the patient was seen at a local primary care clinic which referred her to a hospital emergency room for evaluation. At ED evaluation she was severely hypoxic and had bilateral basilar infiltrates on chest x-ray. No vomiting was noted but an episode of watery stools occurred shortly after admission to the hospital. The highest temperature and hematocrit recorded were 103 ° F and 54.9, respectively; the lowest platelet count was 49,000 mm³; creatinine was not elevated; and there was a left-shift in the WBC with 36 percent bands. Oxygen saturation decreased below 90%, requiring supplemental oxygen without intubation.

Streptococcal pneumonia, *Mycoplasma pneumoniae*, and hantavirus pulmonary syndrome were all considered in the differential diagnosis. The patient was hospitalized for 7 days. On the 5th day of hospitalization, laboratory tests indicated that her serum had IgG and IgM reactivity to antigens for SNV. This was the fourth HPS case in PHR 1 within 13 months.

The patient lives in rural Randall County and mice, species unknown, had been caught in the kitchen and laundry room

area of the home. The barn and other outside buildings had an abundance of rodent feces in them. Health department officials also examined a nearby farm since the patient had spent some time there 4 ½ weeks prior to the onset of symptoms. The vacant house, which was entered by the patient in order to use the restroom facilities, had some rat and mouse feces, though not abundant. One tractor shed where the patient and her mother looked through boxes of stored items had a large amount of rodent feces present. This was the most likely area for her exposure to have occurred.

Texas Department of Health (TDH) records for 1993 through 2000 show that 10 of the 15 Texas residents with HPS survived. The 2 survivors in 2000 brought the HPS case fatality rate down to 33%. Figure 2 provides the demographics for all 15 HPS cases diagnosed since 1993.

Past surveillance conducted in conjunction with human cases of HPS in the Texas Panhandle and South Plains area revealed that only one of the seven specimens sampled from the white-footed mouse (*Peromyscus leucopus*) population was positive for antibodies to hantaviruses. The more commonly found populations of the western harvest mouse (*Reithrodontomys megalotis*) and deer mouse (*Peromyscus maniculatus*) had antibody prevalences of 8.5% (12/141)

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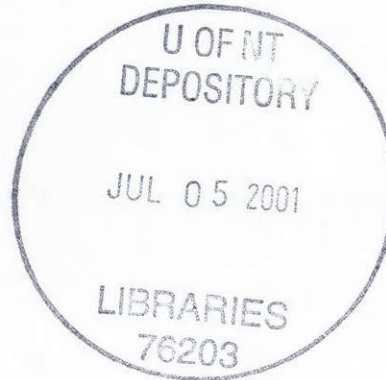
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March Is National Kidney Month

Kidney failure can be acute, in which function can be restored, or chronic, which leads to the irreversible loss of kidney function. Chronic renal failure currently affects more than 22,000 Texans. Diabetes is the leading cause of kidney failure, and hypertension is the second. Therefore, proper management of diabetes and high blood pressure are important ways to reduce the risk of kidney failure.

The National Kidney Foundation (NKF) has launched a program to establish and disseminate guidelines to improve clinical outcomes for individuals with kidney disease at all stages. This effort is known as the Kidney Disease Outcomes Quality Initiative, or K/DOQI—which is an update of guidelines released in 1997 that addressed the care of dialysis patients alone (the Dialysis Outcomes Quality Initiative [DOQI]). The DOQI guidelines, now included in the new K/DOQI, have been updated and the executive summary was published in the January 2001 *American Journal of Kidney Diseases* (Vol. 37, Issue 1). Information on both K/DOQI and DOQI guidelines is available online at the NKF site provided below.

Information on kidney disease, diabetes, high blood pressure and other kidney-related conditions for both consumers and providers is available from the following sources:

- TDH Bureau of Kidney Health Care: <http://www.tdh.state.tx.us/kidney/khcmmain.htm>
- National Institute of Digestive, Diabetes & Kidney Diseases:
<http://www.niddk.nih.gov/health/kidney/kidney.htm>
- National Kidney Foundation: <http://www.kidney.org/>

For comments or questions regarding kidney health care in Texas, contact the TDH Bureau of Kidney Health Care (Y-950), 1100 W. 49th Street, Austin, TX 78756; 512/794-5185, 512/685-3126; kidneynet@tdh.state.tx.us.