disease prevention news

October 11, 1999 Vol. 59, No. 21

Animal Anthrax Case in Uvalde County

Isolated animal anthrax cases may occur throughout the state at any time. However, this zoonotic disease is most commonly seen during summer months west of the Nueces River in Crockett, Edwards, Kinney, Sutton, Uvalde, and Val Verde Counties and in deep South Texas near Hebronville.

This past August the Texas Veterinary Medical Diagnostic Laboratory (TVMDL) reported Texas' first confirmed case of animal anthrax for 1999. The ill animal, a whitetail doe, was one of several whitetail deer and exotic game animals to die suddenly in Uvalde County. The affected animals resided on a 500-acre, high-fenced game ranch. The sudden deaths were initially attributed to contaminated feed because they occurred about 5 days after the animals were provided new feed. Feed samples were shipped to TVMDL, where they tested negative for pesticides and herbicides. The sudden deaths seemed to stop after the new feed was discontinued but resumed about 4 days later.

A rancher had found a fresh whitetail doe carcass that exhibited bleeding from the body orifices, a classic symptom of anthrax. The rancher contacted the Regional TDH zoonosis control veterinarian, and they discussed anthrax as a possible diagnosis. A Uvalde veterinary clinic submitted samples from the doe to TVMDL, which confirmed anthrax on August 30. Anthrax is endemic in Uvalde County, and recent weather conditions had increased the likelihood of grazing animals being exposed to the disease. The risk of anthrax increases during alternating periods of rain and drought.

Anthrax is caused by *Bacillus anthracis.* In humans anthrax has an incubation period of 2 to 5 days and is classified according to the site of infection. The most common natural form is cutaneous anthrax, which results from direct contact with infective tissue or spores. It starts as a painless pruritic papule, much like an insect bite. The papule enlarges and within 1 or 2 days develops into an ulcer surrounded by vesicles. A characteristic black necrotic central eschar with associated edema appears. Despite early, effective therapy, the lesion will finish forming. Of patients with untreated cutaneous anthrax, 5% to 20% develop septicemia and generalized infection resulting in death.

Gastrointestinal anthrax results from the ingestion of contaminated meat; patients may present with either oropharyngeal or abdominal symptoms. The usual course of illness is abdominal distress followed by fever, signs of septicemia, and death.

Pulmonary anthrax results from inhalation of *B. anthracis* spores, usually from contaminated dust. In addition to the potential for naturally occurring anthrax, there is a risk that *B. anthracis* might be used for bioterrorism. Inhalation of anthrax spores is the primary route of infection expected in a bioterrorism incident. Initial symptoms are mild and nonspecific, resembling a common upper respiratory infection. Within 3 to 5 days the patient develops fever, profuse sweating, acute respiratory distress, cyanosis, and shock progressing rapidly to death. Even with proper treatment the fatality rate may approach 85%.

By law, anthrax must be reported. However, it is standard practice for ranchers in areas endemic for anthrax to implement prevention and control measures without seeking laboratory confirmation or reporting suspected cases. Most ranchers in endemic areas are alert for any indication of anthrax and are able to halt outbreaks through immunization and carcass disposal. Therefore, the 28 animal outbreaks reported in Texas during the last 10 years do not reflect the true incidence of the disease; animal morbidity is most likely much higher. Only 5 human cases have been reported in Texas in the last 45 years, 1 in the last 15 years, and none in the 1990s.

Continued ☞

Also in this issue

Farm and ranch workers, veterinarians, meat processors, and hunters are the groups most likely to be exposed to *B. anthracis*. Due to past practices of animal carcass burial and the persistent nature of *B. anthracis*, personnel conducting excavation (eg, laying pipes) in endemic areas are also at risk. Because of the possibility of naturally occurring human cases and the threat, though rare, that anthrax might be used as a terrorist tool, physicians across the state must be prepared to diagnose and treat the disease. They should consider anthrax in their differential diagnosis of indurated cutaneous lesions, especially in counties where anthrax is endemic. Physicians should also consider anthrax if they see groups of patients with fulminant pulmonary pneumonia.

A Gram stain is often diagnostic for anthrax and should be performed on material from lesions (cutaneous), vomitus/feces (gastrointestinal), or sputum (pulmonary). The buffy coat from the blood of patients with suspected gastrointestinal or inhalation anthrax can also be stained. Also diagnostic for anthrax are positive wound/blood cultures and an enzyme-linked immunosorbent assay (ELISA) for antibody to *B. anthracis* toxin that indicates a 4-fold titer rise in the second sample of paired sera. These and other specialized tests are available through the TDH Laboratory. As needed, the TDH Laboratory forwards specimens to other laboratories.

Health professionals should contact the TDH Clinical Bacteriology Section at (512) 458-7582 for further information on laboratory testing for anthrax. **All specimens should be handled with extreme care.**

Cutaneous anthrax may be treated with ciprofloxacin, 750 mg orally twice a day or with doxycycline, 100 mg orally twice a day. Treatment should generally extend for 7 to 10 days, although prolonged treatment may be required. Pulmonary or gastrointestinal anthrax should be treated with penicillin G, 4 million units intravenously every 4 to 6 hours.

Report suspected cases to your local health authority by calling (800) 705-8868, 7 days a week, 24 hours a day.

Prepared by the TDH Zoonosis Control Division.

Information Resources

Anthrax, botulism, smallpox, and plague are the most likely biological agents to be used in bioterrorism. Information on bioterrorism readiness is available at these **Web sites:**

http://www.apic.org
http://www.cdc.gov/ncidod/diseases/bioterr.htm
http://www.cdc.gov/ncidod/dbmd/diseaseinfo/anthrax_g.htm
http://www.cdc.gov/ncidod/diseases/foodborn/botu.htm
http://www.anthrax.osd.mil/
http://www.defenselink.mil/specials/
http://www.who.int/emc-documents/zoonoses/docs/whoemczdi986.html
http://www.tdh.state.tx.us/phpep/dpn/issues/dpn59n20.pdf

Telephone numbers:

USAMRID 301/619-2833
BIOPORT 517/327-1500
(anthrax vaccine producers)
American Red Cross
Salvation Army 888/321-3433
US Public Health Service 800/872-6367
Domestic Preparedness 800/368-6498
National Response Center 800/424-8802

Vaccination of College Students Against Invasive Meningococcal Infection

Over the past five years, the average annual incidence of invasive meningococcal disease (1 case per 100,000 population) in Texas was the same for the general population as for 18- to 24-year-olds (the typical age of college students). Although they were not at greater risk of becoming infected, 18- to 24-year-olds in Texas were significantly more likely than the general population to die of their infections (OR=2.06; 95% CI 1.35, 3.76) .

A recent study demonstrated that, compared with their off-campus counterparts, undergraduate students living on campus in an East Coast state were at significantly increased risk of invasive meningococcal disease (OR=3.4; 95% CI 1.0-11.6).[1] This finding led the American College Health Association (ACHA) to recommend "that college health care providers take a proactive role in providing information to parents and students about meningococcal disease and access to the vaccine." ACHA (www.acha.org/about/vaccine-preventable.htm) also suggested that "college students consider vaccination to reduce the risk for meningococcal disease." The Centers for Disease Control and Prevention and the Advisory Committee on Immunization Practices do not currently recommend meningococcal vaccine for college students unless they will be traveling to countries where meningococcal disease is endemic.

Meningococcal disease occurs more commonly in other parts of the world (such as sub-Saharan Africa) than it does in the US, and travelers to those areas are encouraged to receive meningococcal vaccine. The currently available vaccine offers protection against the A, C, Y and W-135 groups of the *Neisseria meningitidis* bacteria and comes in 1- and 10-dose vials. The vaccine is rarely on hand in physician offices but may be ordered from Pasteur Merieux Connaught by calling 800/VACCINE (800/822-2463). Travel clinics have a limited supply and some university health centers offer it.

In the past 5 years, group C has been responsible for most (51%) of the meningococcal disease in Texas. Although group B *N. meningitidis* accounts for the second highest percentage of cases (21%) in Texas, there is currently no licensed vaccine for this group. A vaccine against the B group may be available in the United States soon. Because students are 10 times more likely to be infected with hepatitis B virus than with *N. meningitidis*, widespread use of hepatitis B vaccine in this age group would prevent more disease than widespread vaccination against meningococcal infections would.

Reference

1. Harrison LH, Dwyer DM, Maples CT, Billman L. Risk of meningococcal infection in college students. JAMA 1999:281(20): 1906-1910.

Meningococcoal Infections in Persons Aged 18-24 Years, By Sex: US, 1994-1998

Sex	1994	1995	1996	1997	1998	Total
Male	17	15	14	8	8	62
Female	10	11	7	6	9	43
Total	27	26	21	14	17	105

For further information contact Erik Svenkerud, MD, MPH, Bureau of Communicable Diseases, at (512) 458-7455 or Mardi VanEgdom, Infectious Disease Epidemiology and Surveillance, at (512) 458-7676.

Disease Prevention News (DPN)
Texas Department of Health
1100 West 49th Street
Austin, TX 78756-3199
Phone: (512) 458-7677
Fax: (512) 458-7340
Email: dpn@discon.tdh.state.tx.us

The electronic versions of *Disease Prevention News* are available at the following location:
http://www.tdh.state.tx.us/phpep/

New Polio Vaccine Recommendations

Since 1979, the only indigenous cases of poliomyelitis reported in the US have been associated with the use of live-virus oral polio vaccine (OPV). Until recently, the benefits of using OPV outweighed the risk. No risk of vaccine-associated paralytic polio (VAPP) has been associated with inactivated polio vaccine (IPV). The Advisory Committee on Immunization Practices (ACIP) and the Centers for Disease Control and Prevention have announced that effective January 1, 2000, the Recommended Childhood Immunization Schedule for the United States will be revised from the current sequential IPV/OPV series to an all IPV recommendation.

Every effort must be made to avoid vaccine waste. Texas Vaccine for Children Program participants should continue to use all doses of OPV until inventories are completed. Depleted OPV inventories will be replaced with IPV only. This might occur before January 1. However, OPV will continue to be available on a very limited basis for the following:

- Mass vaccination campaigns to control outbreaks of paralytic poliomyelitis
- Unvaccinated children who will be traveling in less than 4 weeks to areas with endemic polio
- Children of parents who do not accept the recommended number of IPV vaccine injections

For further information contact Texas Department of Health Immunization Division, at (512) 458-7500.

DPN Renewal Deadline Is December 31!

Subscribing to Disease Prevention News has never been easier! Go to **http://www.tdh.state.tx.us/phpep/**, where you can sign up for one of our electronic subscription services or for a print subscription. Electronic subscriptions never need to be renewed. Next month, by separate mail, subscribers to the printed issues will receive detailed subscription guidelines, including the revised renewal form. ***If you wish to continue your print subscription of DPN without interruption, you must send in your renewal by December 31, 1999.***