Be on Alert for Vector-Borne Diseases and Multiple Bee Stings

El Nino has brought heavy rains to San Diego, leading to increased vegetation, squirrel populations and breeding grounds for mosquitoes. A consequence of this may be an expanded risk of vector-borne diseases such as plague and encephalitis. Although infrequent, illnesses such as encephalitis, plague, rat-bite fever and malaria should be considered when diagnosing vector-borne diseases.

The following diseases are of particular concern in San Diego County and should be considered when seeing patients who have a recent history of exposure to mosquitoes, other arthropods or rodents.

**Encephalitis**

**Symptoms**
Mild cases of this mosquito-borne disease occur as viral meningitis. Severe infections usually have acute onset of headache, high fever, meningal signs, stupor, disorientation, coma, tremors, occasionally convulsions in infants, coma, and spastic, but rarely flaccid, paralysis.

**Laboratory**
Physicians are strongly encouraged to submit blood specimens on suspect cases of meningoencephalitis. If arboviral encephalitis is part of the differential diagnosis, however, the acute phase specimen should be submitted without delay for testing to detect IgM antibodies to St. Louis encephalitis (SLE) or western equine encephalitis (WEE). The initial serum usually has IgM antibodies that can be readily identified by the indirect immunofluorescent antibody (IFA) test.

Please submit 6-8 ml. whole clotted blood, or 3-4 ml. serum from each phase to the County of San Diego Public Health Laboratory, 3851 Rosecrans St., P.O. Box 85222, San Diego, CA 92186-5222. Specimens should be accompanied by a Public Health Laboratory Form 22.

**Hantavirus**
Rodents are the primary reservoir hosts of recognized hantavirus. Infected rodents shed virus in their saliva, urine and feces. Infection may occur when infective saliva or excreta are inhaled as aerosols; when dried or fresh materials contaminated by rodent excreta are disturbed or directly introduced into broken skin; or, possibly ingested in contaminated food or water. Infection has also occurred after a bite by an infected rodent.

**Symptoms**
Initial symptoms are similar to less severe viral infections, with most cases experiencing fever, myalgia and chills. Other symptoms include: dyspnea, nonproductive cough, headache, nausea, vomiting, diarrhea and malaise.

**Laboratory**
At present only the State Viral and Rickettsial Disease Laboratory (VRDL) can test for the viral agent which causes hantavirus pulmonary syndrome (HPS). An acute blood sample (5-10 ml in a red top tube) and a case report questionnaire should be submitted to the Public Health Laboratory which will forward the specimen to the State.

(continued)
A convalescent serology at 10 to 14 days should be collected as well.

In San Diego County, there were no reported human cases of hantavirus in 1997, or 1998 through 6/1/98; no mice tested positive for hantavirus during 1997.

**Lyme Disease**

**Symptoms**
Initial symptoms of this tick-borne disease may include a skin lesion/rash, frequently, but not always, annular (erythema migrans - EM), accompanied by flu-like symptoms, fever and muscle aches. Some individuals exhibit swollen lymph glands.

Most persons treated with appropriate antibiotics at this stage will have a quick recovery. Lack of treatment may result in long-term complications including disorders of the heart or nervous system, and arthritis.

**Laboratory**
Serological tests are widely available, however, their sensitivity are unclear, and they are not standardized. The patient should be treated based on clinical observations.

The Western Black Legged tick (*Ixodes pacificus*) is the primary vector for Lyme disease in California. Ticks may be saved and sent to County Vector Control for identification. Call 694-2888 for directions.

There were 4 non-locally acquired cases of Lyme disease reported in 1997; 1 in 1998 through 6/1/98. Tick pools (1 pool= 5 specimens) collected in San Diego County have shown to be 4% positive for the Lyme disease spirochete.

**Plague**
Plague has been documented in San Diego County in wild animals. Patients should be queried about possible exposures to fleas and/or their wild animal hosts in rural areas if symptomatology is consistent with the following.

There have been no human cases of rabies reported in this county. Animal rabies: in 1997, 1 skunk and 15 bats tested positive; none in 1998 to date. Since 1980, 181 positive bats have been identified (approximately 10% of all bats tested). Most of the bats submitted for rabies testing were sick or dead bats found by the public.

**Rabies**
An invariably fatal, acute viral encephalomyelitis, transmission is through virus-laden saliva of rabid animals. Human rabies can be prevented by: eliminating exposure to rabid animals and appropriate preexposure and post-exposure prophylaxis.*

**Symptoms**
Initial symptoms include onset of apprehension, headache, fever, malaise and sensory changes.

**Laboratory**
For directions on collection and submission of appropriate specimens, call the Public Health Laboratory at 692-8500.

**Reporting**
Prompt reporting by telephone is important.

Call 515-6620, the Epidemiology Unit, weekdays between 8 a.m. and 5 p.m.

On nights and weekends, call 565-5255, the County's communication center.

A Health and Human Services staff person will return the call as soon as possible.

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*Call 515-6620 (fax 515-6644) for the NEW 1998 California Compendium of Rabies Control.