

## Rodent-borne Virus Surveillance

### Hantavirus pulmonary syndrome in California residents

No cases of hantavirus pulmonary syndrome (HPS) were diagnosed in California residents in 2005.

Since 1993, HPS has been diagnosed in 43 California residents. Four of these were identified retrospectively, with onset of illness having occurred in 1980, 1984, and 1992 (2). An additional two California residents were diagnosed with acute Sin Nombre virus (SNV) infection with pulmonary manifestations. The median age of all 45 case-patients was 41 years (range, 12 to 74) and 26 were male. Case-patients were residents of 19 counties — Alameda, Alpine, Contra Costa (2), Inyo (6), Kern (4), Los Angeles (2), Modoc, Mono (9), Nevada (3), Santa Clara (2), Sierra, Ventura (2), and Yolo (2). Probable and possible sites of exposure included the counties of Alameda, Alpine (2), Fresno, Inyo (7), Kern (4), Modoc, Mono (11), Nevada (3), Placer, Plumas (2), San Bernardino, San Diego, Santa Barbara, Sierra, and Tuolumne, and the states of Arizona, New Mexico (3), Utah, and Washington. Fifteen (33%) cases had a fatal outcome.

### Surveillance for hantavirus in California rodents

In 2005, 1,227 rodents were collected and serologically tested for SNV antibody, representing at least 11 species from 5 genera. At least one seroreactive rodent was detected in 13 of 17 California counties in which surveillance was conducted in 2005. Of 1,063 *Peromyscus* spp. collected, 73 (6.9%) had serologic evidence of infection with SNV. Seroprevalence was highest in *Peromyscus maniculatus* at 9.5 percent. Active surveillance since 1993 and retrospective analysis of rodent specimens captured since 1975 have identified serologic evidence of SNV in 12.8 percent of *P. maniculatus* statewide. At least one seroreactive *P. maniculatus* specimen has been identified in 45 of 54 counties sampled (Table 2). *Reithrodontomys megalotis* and *Microtus californicus* specimens have demonstrated evidence of infection with Sin Nombre-like hantaviruses (El Moro Canyon and Isla Vista, respectively), but these strain variants have not been shown to be pathogenic to humans. Seroreactivity has been occasionally identified in *Neotoma*, *Chaetodipus*, and *Spermophilus* rodents in California and elsewhere; however, it is believed that these species are incidentally infected with SNV and are not competent reservoirs or vectors.

### Special studies

#### U.S. Forest Service hantavirus risk assessment

Staff of the California Department of Health Services Vector-Borne Disease Section and California Epidemiologic Investigation Service complete a year-long project to evaluate factors associated with maintenance and transmission of hantavirus at facilities maintained and occupied by the U.S. Forest Service (USFS) in California. Variables evaluated included (1) person-time exposure; (2) employee training and education; (3) rodent opportunity, incentives, and activity,

and (4) SNV activity based on rodent serology. Project sites were selected based on accessibility, Forest Service recommendations and requests, personnel density, and existing data. Data collected in 2005 are detailed in the USFS Activities section of the 2005 Annual Report of the Vector-Borne Disease Section of the California Department of Health Services (pp. 36-48).