

Scientists' calls to warn Yosemite visitors of virus went unheeded

By Christina Jewett, California Watch

California public health scientists have twice recommended in the past five years that Yosemite National Park authorities educate visitors about hantavirus, a rare disease that is linked to the deaths of two park visitors, one illness and a possible fourth this summer. Yet park officials did not warn visitors until after the disease showed up in recent weeks.

In a 2010 risk assessment document, state inspectors explicitly asked Yosemite officials to educate those staying in the tent cabins linked to the hantavirus cases about the fatal disease. The risk assessment was performed after a 54-year-old park visitor fell ill with hantavirus in 2010 after staying in the type of tent cabin inhabited by the 2012 victims.

"Provide each cabin with information on (hantavirus)," the 2010 risk assessment recommended. "Together with the bear safety guidance, guests should be advised to minimize contact with rodents and to report signs of rodent intrusion (e.g., droppings, chewed items) to Tuolumne Meadows Lodge management."

In 2007, state vector-borne disease sector scientists recommended that Yosemite "minimize risk to staff and visitors through an active prevention program that includes the following elements: education ... and active rodent removal within buildings and developed areas."

Capt. Charles Higgins, who has been director of the public health office for the National Park Service for eight years,

said he is not aware of any effort prior to this summer's outbreak to warn tent cabin renters about the disease. He said the risk of disease transmission was thought to be low and there was potential for guests to tune out an overabundance of warning messages.

"That's always a dilemma because people have message fatigue," Higgins said. "Their eyes glaze over, they quit paying attention to messaging. It's a little bit of an art form on when to (issue warnings) and how to approach it."

Yosemite park ranger Kristen Kosick said Yosemite staff were trained about the risks of hantavirus and how to avoid transmission. "There'd been no outreach to visitors but there had been to staff," Kosick said. "It's a general virus people should be aware of if they're in Western states and outdoors."

Training on hantavirus is given to Yosemite employees in the spring and throughout the year, said Kari Cobb, a park ranger. She said education on the disease is mandatory for employees who open up closed buildings after each year's thaw.

Park authorities announced last week that they notified 1,700 people who were possibly exposed to the mouse-spread disease after staying in Curry Village tent cabins. Two people who stayed in the cabins have been reported dead. One other fell ill with a respiratory disease, and there is a possible fourth case.

Scientists have found that the risk for the disease is concentrated in buildings within California's national forests.

Giorgio Cosentino, an East Bay microbiologist, said one of the deceased 2012 hantavirus victims is a physician and a family friend. He said even though the risk of hantavirus transmission is low, the park should have warned visitors that it existed.

“If you can’t get rid of the rodent problem completely and you can’t get rid of the virus completely, the safety net includes educating visitors so if they do become ill, they can get to a hospital sooner,” Cosentino said. “That still doesn’t guarantee that they’ll live, but chances of survival are better if you get to a hospital sooner.”

The rare but deadly disease is spread by white-bellied deer mice and most readily caught by inhaling mouse feces or urine dust inside of buildings. Symptoms begin one to six weeks after exposure and include fever, headache, muscle aches and, later, difficulty breathing. The disease kills more than a third of those infected.

Since 1993, 60 cases have been reported in California, including 2000 and 2010 cases at Yosemite, and 587 in the U.S., according to the California Department of Public Health.

Higgins said his office, in Washington, D.C., has deployed several scientists to study what gave rise to the cluster of hantavirus cases at Yosemite.

“These are opportunities to contribute to the science, to make the effort to understand as deeply possible what the risk factors were that were so different and in the effort help everyone refine their (prevention) strategies,” he said.

Vicki Kramer, chief of the state vector-borne disease section of the Department of Public Health, said scientists have worked closely with Yosemite for three years to examine rodent-, tick- and flea-spread diseases. The park has trapped and tested deer mice to monitor the hantavirus problem and urged authorities to educate visitors.

“It is federal land,” Kramer said. “Certainly we can make recommendations, but it’s up to Yosemite on what further steps to take.”

In 2010, a 54-year-old San Mateo woman reported she became ill

from hantavirus after she stayed in a Yosemite tent cabin. She recovered after three days in a hospital. According to a state summary of the case, she reported seeing one or two mice in the cabin and swept the room with the broom that was provided.

After the 2010 Yosemite case, state Department of Public Health scientists examined the Tuolumne Meadows area and found rodent hiding places, such as stacked firewood, and deficiencies that would allow rodent access to cabins.

“In addition to removal/correction of these factors, (state scientists) recommended providing staff and guests with information and supplies to safely clean and decontaminate cabins,” the 2010 report said.

Reviews by state vector-borne disease scientists show that hantavirus infection, before the Curry Village cases, has tended to be isolated and spread out among rural counties such as Nevada, Mono and Inyo.

Kosick, the Yosemite ranger, said park staff and concessioners were given a 12-page directive that details warning signs of the disease, precautionary measures to prevent infection and protective gear to wear. Kosick said park staff are now handing pamphlets to visitors informing them about hantavirus and expect to continue doing so indefinitely.

Risk for the disease and prevalence in rodents is routinely monitored in California’s national forests.

California Department of Public Health scientists published a 2008 study showing that 20 percent of the deer mice in U.S. Forest Service areas tested positive for the virus, higher than the statewide rate of 12 percent of deer mice. They also concluded that nearly all of the buildings they examined showed signs of rodent access or infestation.

Rodent testing in the Tuolumne Meadows area of Yosemite in a separate 2008 review showed that 24 percent – about twice the

statewide average – of deer mice tested positive for hantavirus.

The study of U.S. Forest Service areas also showed that the disease tends to impact workers, who are often the first people inside buildings inhabited by mice after a snowy winter. In California, those workers comprised 27 percent of the hantavirus cases reported through 2008 and included a camp counselor, ranch hand, sanitation worker and U.S. Forest Service employee.