

## **Hantavirus Pulmonary Syndrome in Yosemite National Park, California, USA.**

### **Background**

Hantavirus Pulmonary Syndrome (HPS) is a severe, sometimes fatal, respiratory disease in humans caused by infection with a hantavirus - in the USA this is Sin Nombre virus. This is not a common disease. Since Sin Nombre virus was first identified in 1993, there have been 556 confirmed cases in the USA, with an additional 31 cases retrospectively identified. Cases have occurred in all States, and usually occur sporadically in rural areas where forests, fields, and farms offer suitable habitat for the virus's rodent hosts. Sin Nombre virus is not found in the UK. Yosemite National Park (YNP) receives up to four million visitors annually.

### **Cluster of infections in Yosemite**

On 16<sup>th</sup> August 2012, the California Department of Public Health reported two confirmed cases of HPS in Californian tourists who stayed within YNP. By 31<sup>st</sup> August, the case count was reported by the US authorities to be six. The risk area at this time was restricted to the "Signature Tent Cabins" in a resort named Curry Village, located in the Yosemite Valley area of the Park. The risk period was considered to be 10<sup>th</sup> June to 24<sup>th</sup> August (when the implicated cabins were closed indefinitely).

On the 7<sup>th</sup> September, the Park authorities reported that there were 8 confirmed cases, 7 associated with the Signature Tents and one in a different area of the Park. This latter case did not seek medical attention at the time of his mild illness. He had visited the High Sierra area of the park where he stayed at several different places and 'wild camped'. This remote area of the park had twice before (in 2000 and 2010) had single sporadic cases. The HPA did not consider that this additional case represented a genuine change in the risk areas within the vast National Park, as the cluster was clearly associated with the named cabins. However, the Park authorities additionally contacted visitors to the High Sierra Camps, and subsequently issued a general warning to all YNP visitors.

On 13<sup>th</sup> September, the Park authorities reported that there were now 9 confirmed cases (all USA residents), of whom 8 developed HPS. Three cases were fatal. No further cases have been identified, so as of 2<sup>nd</sup> October, the case count remains nine, eight of whom acquired infection at the Signature Tent Cabins.

### **HPA Actions**

There was extensive media coverage of the incident, and all persons who had booked to stay at the Signature Tent Cabins were contacted by the National Parks Service - this happened before the HPA was informed. Lists of UK residents who had booked to stay at the affected site were subsequently supplied to the HPA by CDC and the Park authorities. HPUs made contact with these persons to reassure and advise them accordingly. The HPA also informed NHS Direct and gave advice on handling calls. Following numerous calls to the HPA from GPs, a CAS alert was prepared and circulated on 4<sup>th</sup> September. Guidance on laboratory testing and clinical management of suspect cases was prepared by the Rare and Imported Pathogens Laboratory, and circulated on 5<sup>th</sup> September. By the end of September, more than 350 persons have been contacted by either the HPA or by US authorities, including all those who had definitely booked to stay in the implicated cabins. No cases of acute hantavirus infection have been diagnosed amongst persons who have been clinically assessed and/or investigated.