

## Encephalitis Cluster in Whistler Area due to California Serogroup Virus

Vancouver Coastal Health (VCH) Medical Health Officers were recently notified of a cluster of three paediatric cases of encephalitis with onset of symptoms in August 2024. All tested positive for Jamestown Canyon/Snowshoe Hare Virus and are residents of Whistler, BC. An investigation is underway to understand this cluster and the prevalence of these viral infections in Whistler and elsewhere in VCH. **To help with this investigation, we ask that physicians and nurse practitioners report to VCH Public Health any cases of meningitis or encephalitis, in children or young adults, where no pathogen was identified and with symptom onset between May and October 2024.** We request these cases be reported to VCH Public Health by calling 604-675-3900 during business hours.

**Epidemiology:** Jamestown Canyon virus (JCV) and Snowshoe Hare Virus (SSHV) are mosquito-borne viruses that belong to the California serogroup in the Bunyaviridae family. They have a similar life cycle and clinical presentation to West Nile Virus, and circulate between mosquitoes and mammalian reservoirs. When symptoms occur, it is usually 5-15 days after a mosquito bite. JCV/SSHV have been identified in BC and across Canada for decades, but reports of human illness are rare. Prior to this cluster, ten cases of JCV/SSHV had been reported in BC since 2009, two in the VCH region. Serological surveys from other parts of Canada have found between 1%-42% of the population having evidence of a previous infection, suggesting this may be a common cause of asymptomatic or mild summer viral illness and an under-recognized cause of meningitis and encephalitis in some communities.

**Clinical Presentation:** It is believed that most infections with JCV/SSH are asymptomatic. Symptoms can range from fever, headache and vomiting to more severe presentations with high fever, meningeal symptoms, tremors, and occasionally seizures (especially in children). Neuroinvasive presentations are clinically indistinguishable from other viral causes of aseptic meningitis and encephalitis. Rarely, acute flaccid paralysis can occur. Severe infections may result in various sequelae such as behaviour changes, learning disabilities, and cognitive deficits. Neuroinvasive presentations in adults are more commonly from JCV virus and in children from SSHV. While difficult to quantify, it is thought that the proportion of cases with neuroinvasive disease is low. Treatment is supportive, but pathogen identification is important as it can influence surveillance, mosquito control strategies, and health promotion messaging around preventing mosquito bites (i.e. wearing long sleeved clothing, using insect repellent containing DEET etc.).

**Diagnostics and Testing:** To request serology for patients suspected of having acute illness with California Serogroup Virus (which include JCV/SSHV), send serum samples to the BCCDC Public Health Laboratory. Diagnosis is determined by the presence of IgM antibodies as well as a four-fold rise in antibody titres between acute and convalescent phases (drawn at least 2 weeks apart). If indicated (i.e. severe disease with signs of neuro-invasion), cerebrospinal fluid can also be tested for acute IgM antibody or RNA detection. If you have questions related to testing, please contact the BCCDC medical microbiologist on call 604-661-7033. For patients with suspected infections that have resolved, please contact VCH public health (604-675-3900) to determine if further testing is warranted.

**Reporting:** As a reminder to all physicians and nurse practitioners, cases of encephalitis, meningitis as well as emerging illnesses or clusters of infections are reportable to the local Medical Health Officer as per the *Reporting Information Affecting Public Health Regulation* from the Public Health Act.

You can reach a Medical Health Officer at 604.675.3900 | Toll free at 1.855.675.3900 For public health emergencies after hours, contact the Medical Health Officer on call at 604.527.4893

### Vancouver Coastal Health Medical Health Officers

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