

Physician awareness of lyme disease in British Columbia

**Bonnie Henry, MD, MPH,
FRCPC, Alexis Crabtree, MPH,
Muhammad Morshed, PhD,
SCCM**

Lyme disease (LD) is a tick-borne zoonosis caused in North America by infection with the spirochete *Borrelia burgdorferi* sensu stricto. Humans acquire LD through the bite of an infected tick. The principal vector in British Columbia is the Pacific black-legged tick *Ixodes pacificus*. This tick is found throughout the highly populated areas of southern BC but reported LD cases remain rare. In 2008 the BCCDC partnered with the College of Physicians and Surgeons of BC to assess physician knowledge, beliefs, and practices with respect to LD in BC. We developed and mailed a survey to all practising physicians in BC who were pediatricians, internists, or family practitioners and who gave a BC address as their primary practice address. Here we present preliminary findings from the survey.

The response rate was 35% (1869/5397). One hundred forty-eight (8%) respondents recalled diagnosing a total of 221 cases of LD in the previous year, 2007 (range 0 to 5 cases per physician); 1,459 (92%) indicated they did not diagnose a case of LD in 2007. Despite 58% of family physicians and 66% of specialists responding that

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Dr Henry is medical director of the Vector-borne Disease Program at the BC Centre for Disease Control. Ms Crabtree is a research assistant at the BC Centre for Disease Control. Dr Morshed is program head of Zoonotic Diseases and Emerging Pathogens at PHSA Laboratories.

they knew LD was reportable to public health authorities in BC, only 13 cases were reported in 2007. Physicians scored highly on certain knowledge questions with over 90% correctly identifying the signs and symptoms of LD, the causative agent, and incubation period. Fewer were aware that erythema migrans (EM) on its own was diagnostic for LD. An

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overall knowledge score based on 12 questions was developed with family physicians scoring a mean of 73% (8.8/12) and specialists 75% (9.0/12). This is similar to physicians' scores on the same instrument in an area of the US where LD is much more commonly encountered.

Three clinical scenarios were presented in the survey in order to evaluate physician behaviors related to LD. Scenario 1 presented a patient with EM and no laboratory testing; 58% of family physicians and 55% of specialists answered correctly that they would "give antibiotics at this time," while 36% of family physicians and 35% of specialists opted first to test for LD. Scenario 2 focused on the presentation of an asymptomatic patient with history of a tick bite; 51% of family physicians and 61% of specialists indicated correctly they would educate and reassure the patient but not prescribe antibiotics or test the patient for LD. Scenario 3 presented a patient with arthritis, no history of EM, and

multiple negative tests for LD; 82% of family physicians and 81% of specialists correctly reported they would investigate causes other than LD or refer the patient to a specialist.

These results provide valuable insight into clinician knowledge, beliefs, and practices in BC. Physicians in general are knowledgeable about LD and are aware of the risk of the disease in BC despite it being a low endemic area. One issue identified in the survey was 60% of respondents were not aware that EM is considered diagnostic for LD; therefore, if the patient presents with EM, no laboratory testing is necessary. The antibody test may be negative early in LD, as it may take several weeks for the patient to develop antibodies to *B. burgdorferi*. If the diagnosis is unclear, particularly if EM is atypical or absent, and acute serology is negative, a convalescent test 2 to 4 weeks later may aid in diagnosis. However, early treatment with a course of antibiotics based on clinical judgment is warranted if the clinical signs and symptoms are compatible with LD. A person with EM if treated early with antibiotics may not develop antibodies against *B. burgdorferi*. Antibodies (IgG) may also persist in the blood for years even after curative treatment; therefore a positive antibody test posttreatment is not indicative of treatment failure. While there is no consensus on cause of persistent symptoms in some people after appropriate treatment for LD, it is clear these patients might benefit from a more coordinated model of diagnosis and care.

Physicians are reminded that LD is a reportable disease in BC and both acute clinical cases and laboratory confirmed cases should be reported to local public health.