

## Executive Summary

Communicable disease control has been at the core of public health activities for 150 years and BC enjoys a relatively low burden of disease from infections compared with historical rates. Maintaining a strong monitoring and response system is essential to keeping it that way, because emerging infections are the only category of human illness that can grow logarithmically if unchecked.

In 2016, we continued to observe benefit to some of our longstanding control programs. Rates of key infections now preventable by vaccine such as hepatitis B, hepatitis A and Meningococcal disease continue to fall. BC continues to make strides against tuberculosis, the original disease for which public health practitioners have considered “treatment to be prevention”. Strides in genomics now mean that remaining BC patients with TB can be very sure that their treatment will be effective.

We continue to see new cases of HIV diagnosed in BC but have enjoyed a long term decline in incidence. However, there has been growth in the rates of some other sexually transmitted infections. Chlamydia, gonorrhoea and syphilis have been on the rise. The explanations are complex but no doubt relate to a diminished fear of HIV now that it is less common and less fatal, a lamentable decline in safe sexual practices in casual encounters and the impact of internet partnering.

BC saw several notable infectious disease outbreaks in 2016.

- An increase in Norovirus infections (causing severe vomiting and diarrhea) was associated with eating contaminated oysters.
- High rates of mumps transmission, including a large sporting event resulted in 148 cases. Those most at risk were people aged 21-46 who would have received only one dose of vaccine.
- Invasive infections caused by Group A Strepto-

cocci were also on the rise last year. There was a case fatality rate of 7.9% among the 303 cases. While no strain clearly dominated, those injecting drugs or experiencing homelessness were at higher risk.

- Forty- four British Columbians came home from the Caribbean, Central or South America with Zika virus infection during 2016. Offspring born to four affected pregnant women have been well to date and rates in 2017 are well below what was seen last year.
- During the summer and fall of 2016, BC had an increase in reports of enterovirus D 68. This virus can cause fever and rash but can also cause neurological complications and resulted in at least 50 hospitalizations.

BC prescribers are doing their bit to slow down the threat of antimicrobial resistant organisms. The overall rate of antibiotic prescribing was down 15% in the first 10 years of the Do Bugs Need Drugs? program and BC prescribers have been switching away from excessive use of fluoroquinolones and new macrolides toward first line agents.

British Columbia's Regional Health Authorities and BCCDC continue to engage and investigate enteric outbreaks. During 2016, norovirus and Salmonella were the dominant causes. BCCDC and the regional health authorities are collaborating in longer term investigations to understand the continued slow rise in the rate of Salmonella disease in Canada.

The 2016/17 influenza season was more active than most years, in line with the observed dominance of Influenza A H3N2 for most of the season. Such strains tend to cause more morbidity, cause more outbreaks in long-term care facilities as was observed last year and are a challenge for vaccine makers. BC estimates of last year's vaccine effectiveness against Influenza A H3N2 was 42%, essentially the same

estimate as that observed by the US CDC in the same period.

There was an increase in the rate of reporting of Lyme disease in BC during 2016. This most likely results from increasing testing volume due to awareness and institution of new diagnostic tests at BCCDC Public Health Laboratory and the National Microbiology Laboratory (NML). Fully 68% of cases received a diagnosis using a new test for European Lyme strains at NML (yet to be fully assessed for accuracy in Canada) and are most likely acquired outside of BC.

Going forward, BCCDC will continue to unite the sciences of epidemiology and laboratory medicine to prevent infectious diseases and reduce their burden on the population. Innovative new programs of coordinated hepatitis C diagnosis and treatment are underway to reduce the risk of liver disease from this common viral infection in our province. We will continue to engage with community to address the ongoing challenge of sexually transmitted diseases and look forward to increasing the benefits of immunization for British Columbians. We greatly value the integrated and collaborative approach to managing reporting and outbreak investigation with our regional health authority partners, without whom the BC public health efforts in communicable disease control would be impossible.

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