Executive Summary

This report provides an overview of reportable communicable disease activity in British Columbia based on reports received by BC health authorities in 2017. Select diseases which exhibited unusual patterns in the year are described in the “Noteworthy Diseases and Conditions in 2017” section, with the remainder described later in the report in their usual category. This report is supplemented by the Reportable Disease Dashboard which provides online access to users interested in looking at specific diseases by select time, age group, sex, and geographic parameters. For select diseases additional, more detailed summaries are available in quarterly or more detailed annual reports at the same ‘Data & Reports’ page as the annual report on www.bccdc.ca

In 2017, several novel trends or diagnostics were noted. Mumps incidence continued to be high, and higher than in the prior year which had been marked by province wide transmission associated with an outbreak. In 2017, 160 confirmed cases were reported mainly from the Lower Mainland, with a median age of 26, similar to that observed in 2016 and reflective of the ‘one dose’ cohort of adults sandwiched between younger two-dose mumps vaccine recipients, and older adults with wild type immunity. Meningococcal disease rates were dramatically increased from 0.19 in 2016 to 0.54 per 100,000 in 2017, with 16 of the 26 total cases due to serogroup W; 15 of the W cases were of the ST-11 clonal complex which disseminated globally starting in the year 2000 following an outbreak in the Hajj, and has been associated with hyperendemic rates and outbreaks in several countries. In BC it was associated with an outbreak among adolescents in the Okanagan Health Service Delivery Area, resulting in an immunization campaign in late December. Invasive group A streptococcal disease continued at a high rate of 8.7 cases per 100,000 population, compared to a median of 3.9 per 100,000 in the prior decade. One third of cases were homeless/underhoused, and/or injection drug users. While one third of cases were associated with severe clinical presentations, the case fatality rate was relatively low at 4%. No single emm type has been associated with the observed increased incidence in BC, with predominant emm types shifting year to year. Also in 2017, whole genome sequencing (WGS) was applied systematically in BC for the first time to human isolates of Salmonella and its contribution to recognition of related cases is described; of 29 recognized clusters, 8 were formally investigated with chicken identified as the source in all but one. These findings led to product recalls and a regulatory change for frozen breaded chicken products, which is expected to result in a reduction in future cases and outbreaks.

Enteric, food and waterborne diseases

A total of 33 enteric outbreaks were investigated with norovirus and Salmonella the most frequently identified pathogens. Unusually, five outbreaks of E. coli were reported. Nineteen outbreaks were foodborne. Some unique pathogen-source combinations were identified. Fifty-seven cases of cyclosporiasis were reported, and while most were travel associated, 19 were acquired in BC and associated with a national outbreak for which the source was not identified but was linked to fresh produce. Shigatoxigenic E. coli was reported at a higher rate than in previous years, thought to be due to new laboratory detection methods for non-O157 strains such as O121; one quarter of the 176 cases reported were international travel associated. Among locally acquired cases, 4 outbreaks were detected, two of which were linked to contaminated flour. BC experienced the lowest rate of hepatitis A ever reported, with three quarters of cases among males. Similarly, the lowest rate of listeriosis in the past decade was reported, with 11 cases all among those aged 60+ years and no outbreaks detected. Non-typhoidal Salmonella accounted for the second most frequent enteric disease reported in BC. One third of cases were associated with international travel. Endemic rates continued at the high rates observed in recent years; just over half of cases are associated with S. Enteritidis for which BC has a farm to fork reduction strategy, but accounted for 6 of the 10 Salmonella outbreaks observed during the year. Typhoid fever acquired almost exclusively through travel occurred at twice the rate of paratyphoid fever, both occurring largely in the first third of the calendar year and related to seasonal travel to South Asia. Shigellosis cases were at the lowest rate reported in the past decade, driven by a decline in S. sonnei detection; this species has predominated for the third year in a row. There was a shift to children aged 1-4 compared to previous years in which rates were highest among men 25-29 years old; over half of cases are associated with international travel. Vibrio infections occurred at the lowest rate since 2011 because of a decline in Vibrio parahaemolyticus. Most infections were associated with raw bivalve shellfish consumption with highest incidence observed in adults and during the summer months, when Vibrio counts in shellfish harvest beds are usually elevated.
Environmental pathogens

Cryptococcus gattii, an infection endemic to select coastal regions of Vancouver Island and the Lower Mainland, accounted for 12 reported cases all in adults likely to have acquired the infection within BC including through travel within the province. Legionellosis mostly due to L. pneumophila was reported at a slightly higher level than in prior years, potentially due to increasing use of two new diagnostic tests in BC. No outbreaks were detected, with a seasonal preponderance among the sporadic cases in the fall and early winter.

Tuberculosis

A slight increase in tuberculosis incidence was observed in 2017, with 263 reported cases. Most cases arise in foreign-born individuals infected earlier in life, with rates higher in men than women and geographically concentrated in the Lower Mainland due to immigration patterns.

Sexually transmitted and bloodborne pathogens

Genital chlamydia infections which have been increasing since the late 90s accounted for close to 15 and a half thousand reported cases, with higher rates among females; in contrast lymphogranuloma venereum predominated among the men who have sex with men (MSM) community. Genital gonorrhea rates declined in 2017 following a sharp increase in 2015, possibly associated with a shift in strain-type and testing practices. The rate in males is about twice that of females. Hepatitis B acute infections have remained uncommon, with 10 cases reported and none under 25 years of age. Continual declines in chronic and undetermined status hepatitis B cases have been observed in the past decade. A slight decline in hepatitis C cases was reported, although in the three years from 2015 a trend for higher reporting was seen, potentially driven by increased awareness, testing and availability of effective treatment. Rates of new HIV diagnoses have continued to decline with 186 new cases reported in 2017, of which only 17 were in females, with smaller declines among MSM compared to people who use injection drugs and those acquiring HIV through heterosexual contact. AIDS cases have also continued to decline. Infectious syphilis rates remained high as in recent years, with most cases male and predominated by MSM.

Vaccine preventable diseases

Three sporadic cases of invasive Haemophilus influenzae type b were reported, all in adults over 50 years. Only one measles case was reported in an older adult without documented history of prior measles vaccination and with a travel history compatible with infection acquired internationally; no transmissions from this case occurred. Pertussis rates were higher than rates prior to 2012, since which year there has been increasing incidence, with geographic variability. Rates were highest in infants, followed by children 5-9 and 10-14 years old. Invasive pneumococcal disease rates were higher than historical, with low rates in children under 5 but higher in all adult age groups. No fatal outcomes occurred among the 26 cases reported in those less than 17 years of age; among the 8 cases reported in children under 5, only two were potentially preventable by the current immunization program when taking into account the causal serotype and child’s immunization history.

The influenza season was a mixed and prolonged season of both influenza A (A/H3N2) and B (Yamagata) activity, which caused a large number of outbreaks in long term care facilities, exceeded in the prior 15 years only by the number of outbreaks reported in the 2016/7 season. Most indicators of influenza activity were above historical averages, and elderly individuals were more affected in keeping with the circulation of A/H3N2. Seasonal influenza vaccine interim effectiveness estimates for the A/H3N2 strain were a low 17% but higher for influenza B at 55%.

Vectorborne and zoonotic diseases

Seventeen confirmed cases of Lyme disease were reported, including 9 caused by a European strain of the bacterium indicating likely acquisition outside of BC. No cases of human rabies were reported but rabies exposures increased with over half reporting exposure outside of Canada. Forty individuals had potential rabies exposures from monkey bites or scratches while traveling mainly in Thailand and Bali. Nine confirmed Zika virus cases were identified, including 2 women who were pregnant at the time of infection; all cases had travel compatible with countries known to have circulating Zika virus. This is a substantial reduction in cases over the prior year.

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