BC pertussis summary through February 28, 2025: atypical seasonal increase with heightened infant and pre-school levels

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This bulletin provides updated information on pertussis activity in British Columbia (BC) and elsewhere, including recent trends since the last BC Provincial Pertussis Summary (December 2024) and spanning through February 28, 2025.

Summary findings and messages

1) While the number of pertussis case reports in BC in 2024 (n=352) was below cyclical peaks in 2015 or 2016 (n~1000), activity was delayed compared to the typical spring/summer peak, increasing instead in late summer and remaining elevated at ≥45 case reports per month between August and December 2024.

2) In 2025, January case counts (n=61) remained elevated, exceeding January tallies of all prior years since 2014 (ranging 8 to 56 cases between 2014-2024; excl. 2021-2023 with ≤1 case). Case counts in February 2025 (n=30) are lower but may increase as data become more complete. Of note, by February 28, the 2025 year to date (YTD) case tally is already about one-quarter of the full year tally in 2024. Compared to 2014-2024, the 2025 YTD pertussis incidence of 1.6 cases per 100,000 is surpassed only by YTD incidences in 2015 and 2017 (both 2.0 per 100,000).

3) Through February 28, the incidence per 100,000 infants <1 year is substantially higher (20.9) than the same YTD incidences of 2014-2024 (ranging 2.2 to 11.2; excl. 2021-2023 with ≤1 total case). Among 1-4-year-olds, YTD incidence in 2025 is also higher (12.2 versus 0.5 to 9.1). Incidences in all other age groups remain within historic ranges, including 10-14-year-olds (5.9), 5-9-year-olds (3.2), and 15-19-year-olds (2.5), with incidences ≤1.2 in all older age groups. Milder presentations beyond infancy may contribute to undiagnosed cases, unrecognized community transmission and surveillance under-ascertainment in older children and adults.

4) Of cases with known pertussis immunization status, most are not up to date. While difficult to predict, heightened off-season activity sustained through the winter may herald further escalation during the upcoming spring/summer period of typical cyclical peaks. Proactive measures to mitigate the pertussis risk should be taken now. This includes reinforcing up-to-date vaccination, notably to reduce the risk of severe outcomes, greatest among infants <3 months of age, through vaccination of pregnant people and timely receipt of the first dose of pertussis-containing vaccine for infants. Proactive regional outreach to communities where vaccination coverage may be suboptimal is warranted.

Updated BC observations as of February 28, 2025

While other areas in Canada and internationally experienced resurgent pertussis activity after the COVID-19 pandemic that surpassed prior peak pertussis seasons, in BC, the number of case reports has remained within the the expected range (**Figure 1A**). In 2024, however, pertussis resurgence in BC was delayed, occurring in August and somewhat later than the typical spring/summer peak period. Activity remained elevated at ≥45 cases per month between August 2024 and January 2025 (**Figure 2**).

As of February 28, 2025 (epi-week 9), BC health authorities have reported 91 laboratory-confirmed or epidemiologically-linked pertussis cases year to date (YTD) – already about one quarter of the full year tallies in 2024 (n=352) (**Figure 1A; Figure 1B**). Provincial case counts in January 2025 (n=61) exceed January case counts of all prior years since 2014 (ranging 8 to 56 cases between 2014-2024; excl. 2021-2023 with ≤1 case) (**Figure 2**). Case counts in February 2025 (n=30) are lower but may increase as data become more complete (**Figure 2**; **Figure 3**). Of YTD cases with known immunization status, most have not been up to date for pertussis immunizations. The 2025 YTD incidence of 1.6 cases per 100,000 remains within historic ranges for the same YTD period between 2014-2024 (ranging 0.5 to 2.0 per 100,000; excl. 2021-2023 with ≤1 case), but is exceeded only by 2015 and 2017. YTD regional incidence continues to be highest in Interior (3.2 per 100,000) and Northern (7.9 per 100,000) health authorities with both regions reaching their second-highest YTD incidences since 2014 (**Figure 1B**).

Age-specific YTD incidence per 100,000 in 2025 remains highest in <1-year olds (20.9), exceeding the same period of 2014-2024 (ranging 2.2 to 11.2; excl. 2021-2023 with ≤1 total case) (**Figure 4A; Figure 4B**). The second-highest incidence is among 1-4-year-olds (12.2), also exceeding 2014-2024 (ranging 0.5 to 9.1) whereas historically between 2014-2020 their incidence was often exceeded by older school aged children 5-9 and 10-14 years. Pertussis incidences in all other age groups remain within historic ranges, including 10-14 (5.9), 5-9 (3.2), and 15-19 (2.5) year olds, with incidences ≤1.2 in all older age groups.

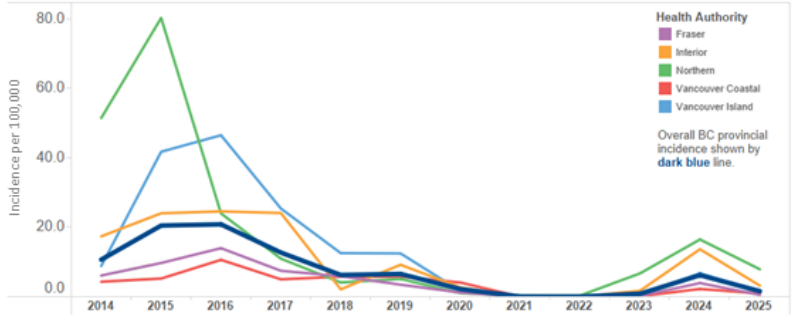
Background context

In BC, as elsewhere, pertussis is an endemic disease with cyclical peaks occurring every 2-5 years[1]. Infants <1 year are at highest risk of hospitalization, intensive care unit admission and death, with the highest risk occurring among infants <3 months of age[1]. Because of their more severe presentation, pertussis in infants may be more readily detectable and indicative of community trends overall. In 1997, most Canadian provinces (including BC) replaced the whole cell pertussis vaccine with a more efficacious (and less reactogenic) acellular pertussis vaccine, and in 2004 added a Grade 9 Tdap (tetanus, diphtheria, acellular pertussis) booster dose[1]. In 2020, BC joined other provinces in publicly-funding an additional Tdap dose for pregnant people each pregnancy, ideally between 27-32 weeks gestation to protect newborns before they can receive a first dose directly[2]. Between 2004 and 2011, BC experienced trough pertussis levels, followed by cyclical peaks in 2012, 2015, and 2016. Pandemic mitigation measures in 2020 suppressed pertussis activity (**Figure 1A**)[1]. BC pertussis data for 2014-2023 are available on the BCCDC Communicable Disease Dashboard. Updated pertussis surveillance data for Canada remain pending[3] .

References

1. Chambers, C. *et al.* Pertussis Surveillance Trends in British Columbia, Canada, over a 20-year Period: 1993-2013. *CCDR* **40**, 31–41 (2014).
2. BC Centre for Disease Control. Communicable Disease Control Manual, Chapter 2: Immunization. (2024).
3. Public Health Agency of Canada. Reported cases from 1924 to 2022 in Canada - Notifiable diseases on-line. https://diseases.canada.ca/notifiable/charts?c=pl.

Figure 1A. Annual incidence (per 100,000)
BC overall and by Health Authority



Annual incidence (per 100,000)

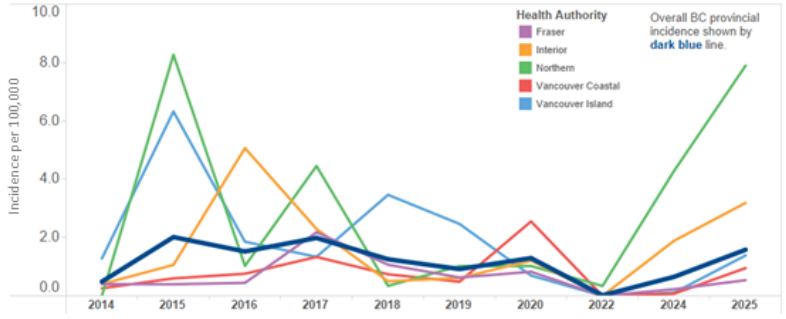
BC	10.7	20.5	20.8	12.7	6.3	6.5	2.2	0.0	0.0	0.8	6.2	1.6
Fraser	6.1	9.7	14.0	7.5	5.9	3.5	1.2			0.2	3.9	0.5
Interior	17.4	24.0	24.6	24.1	2.1	9.2	2.7			1.7	13.7	3.2
Northern	51.5	80.3	24.0	11.0	4.1	5.1	1.0	0.3	0.3	6.7	16.5	7.9
Vancouver Coastal	4.3	5.2	10.6	5.0	5.8	5.8	4.1			0.2	2.2	1.0
Vancouver Island	8.8	41.7	46.5	25.4	12.5	12.5	1.6	0.1		0.4	6.8	1.4

Annual case counts

BC	503	976	1,013	627	314	334	113	2	1	46	352	91
Fraser	106	171	252	137	110	66	23			5	86	12
Interior	129	181	189	189	17	75	22			15	123	29
Northern	149	233	70	32	12	15	3	1	1	20	50	24
Vancouver Coastal	50	61	126	60	70	72	51			2	30	13
Vancouver Island	69	330	376	209	105	106	14	1		4	63	13

Data Source: VPD Data Mart; current to February 28, 2025

Figure 1B. YTD (Jan 1 – Feb 28) incidence (per 100,000)
BC overall and by Health Authority



YTD incidence (per 100,000)

BC	0.5	2.0	1.5	2.0	1.3	0.9	1.3	0.0	0.7	1.6
Fraser	0.4	0.4	0.4	2.2	1.1	0.6	0.8		0.2	0.5
Interior	0.4	1.1	5.1	2.3	0.5	0.6	1.2		1.9	3.2
Northern		8.3	1.0	4.5	0.3	1.0	1.0	0.3	4.3	7.9
Vancouver Coastal	0.3	0.6	0.8	1.3	0.7	0.5	2.6		0.1	1.0
Vancouver Island	1.3	6.3	1.9	1.3	3.5	2.5	0.7		0.1	1.4

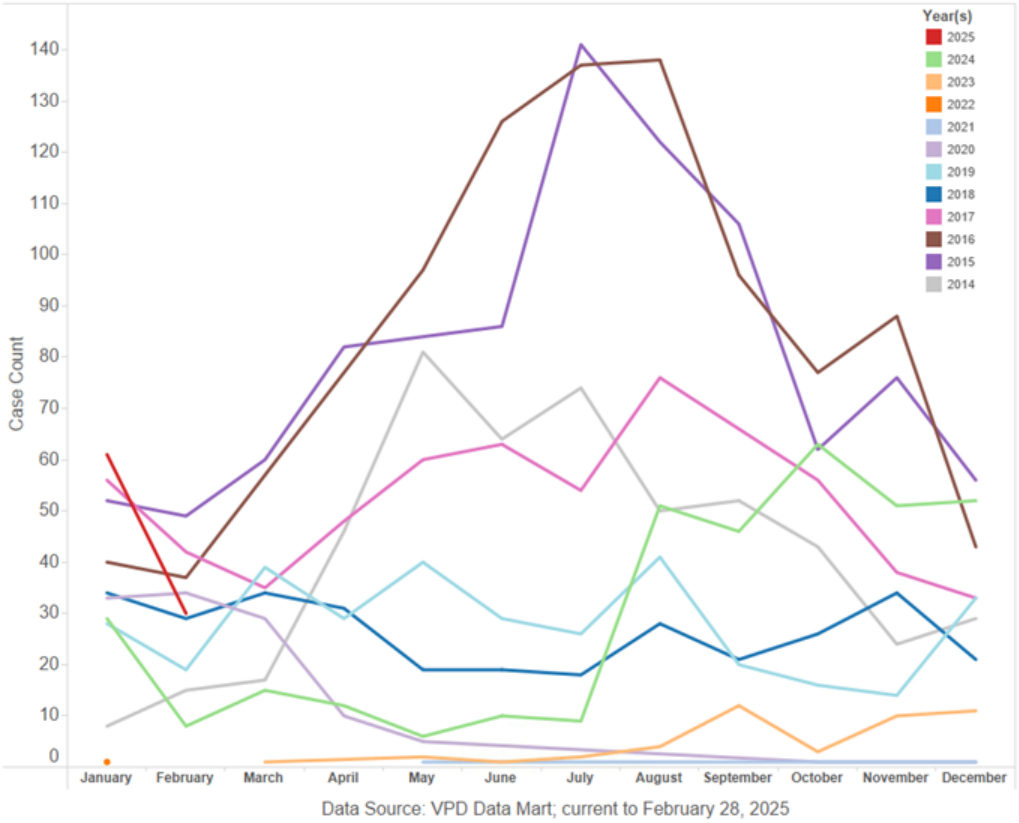
YTD case counts

BC	23	96	74	98	63	47	67	1	37	91
Fraser	7	7	8	40	20	12	16		5	12
Interior	3	8	39	18	4	5	10		17	29
Northern		24	3	13	1	3	3	1	13	24
Vancouver Coastal	3	7	9	16	9	6	32		1	13
Vancouver Island	10	50	15	11	29	21	6		1	13

Data Source: VPD Data Mart; current to February 28, 2025

Tallies reflect confirmed cases, including laboratory-confirmed or epidemiologically-linked events.
For 2025, data are for the period between January 1 and February 28, 2025.

Figure 2. Case counts by month and year, BC



Data Source: VPD Data Mart; current to February 28, 2025

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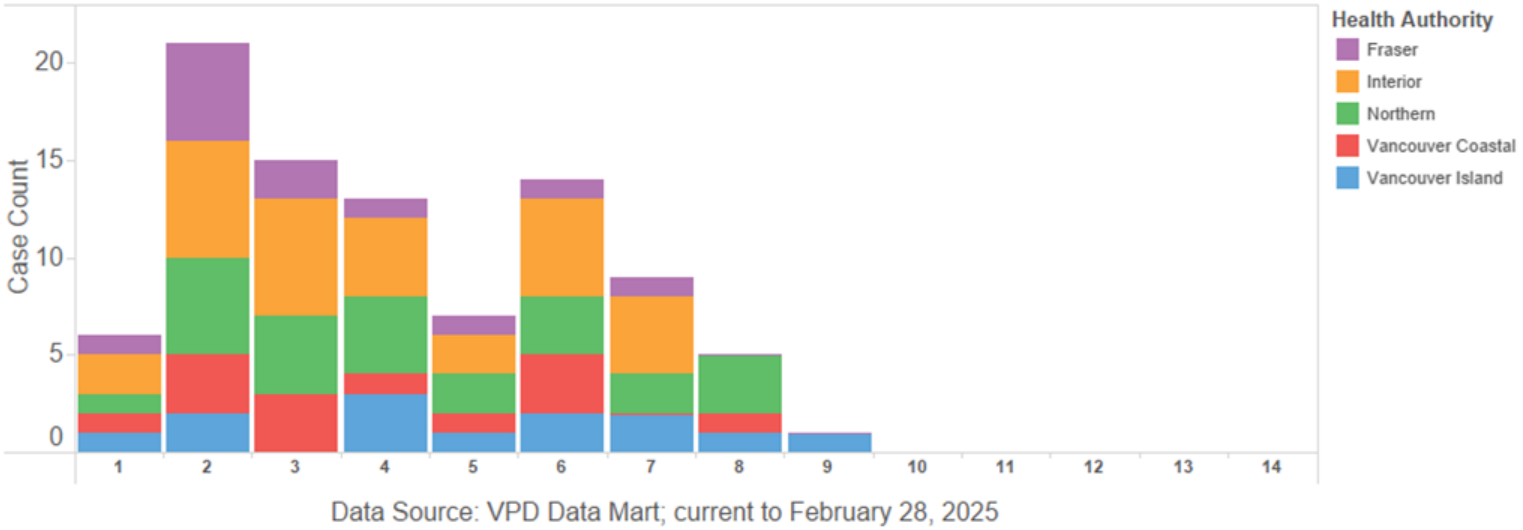
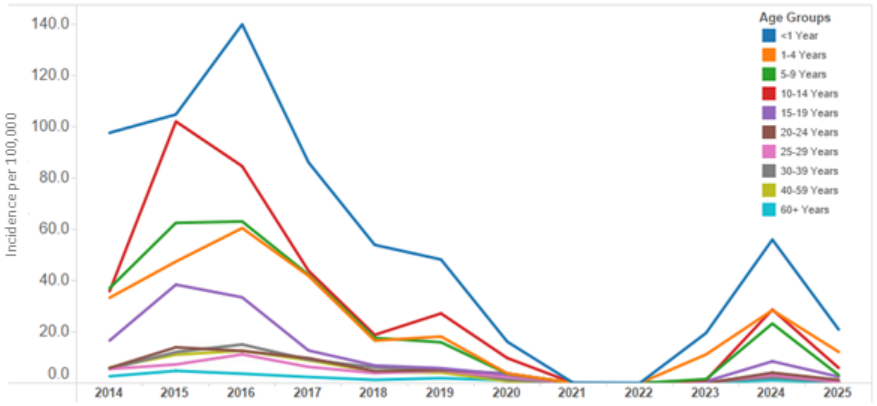
Figure 3. Case counts by epi-week and Health Authority



Tallies reflect confirmed cases, including laboratory-confirmed or epidemiologically-linked events.
For 2025, data are for the period between January 1 and February 28, 2025.

Figure 4A. Annual incidence (per 100,000)
BC overall and by Age Group

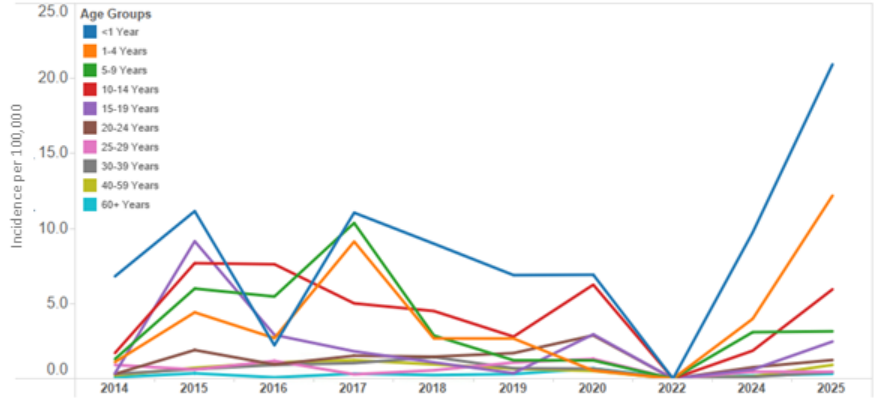


Annual incidence (per 100,000)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
BC	10.7	20.5	20.8	12.7	6.3	6.5	2.2	0.0	0.0	0.8	6.2	1.6
<1 Year	97.7	104.9	140.1	86.2	54.0	48.3	16.2			19.6	56.0	20.9
1-4 Years	33.3	47.5	60.5	41.9	16.6	18.2	3.8			11.2	28.5	12.2
5-9 Years	37.1	62.6	63.1	42.3	17.7	15.9	3.6			1.5	23.2	3.2
10-14 Years	35.9	102.1	84.7	43.9	18.8	27.2	9.8			1.1	28.7	5.9
15-19 Years	16.6	38.4	33.5	12.7	6.9	5.8	3.3			0.7	8.5	2.5
20-24 Years	5.9	14.0	12.6	9.8	4.7	5.1	3.7				4.0	1.2
25-29 Years	5.5	7.3	11.2	6.3	3.9	4.8	2.4			0.2	3.2	0.5
30-39 Years	5.6	12.1	15.1	9.2	6.2	5.4	1.3	0.1		0.4	2.2	0.4
40-59 Years	6.1	11.1	12.6	8.9	4.5	4.1	0.7			0.1	3.4	0.9
60+ Years	2.7	4.8	3.7	2.4	1.3	1.9	1.0	0.1	0.1	0.2	1.1	0.3

Data Source: VPD Data Mart; current to February 28, 2025

Figure 4B. YTD (Jan 1 – Feb 28) incidence (per 100,000)
BC overall and by Age Group



YTD incidence (per 100,000)

	2014	2015	2016	2017	2018	2019	2020	2022	2024	2025
BC	0.5	2.0	1.5	2.0	1.3	0.9	1.3	0.0	0.7	1.6
<1 Year	6.8	11.2	2.2	11.1	9.0	6.9	6.9		9.7	20.9
1-4 Years	1.1	4.4	2.7	9.1	2.7	2.7	0.5		4.0	12.2
5-9 Years	1.3	6.0	5.5	10.4	2.9	1.2	1.2		3.1	3.2
10-14 Years	1.7	7.7	7.6	5.0	4.5	2.8	6.3		1.9	5.9
15-19 Years	0.4	9.2	2.9	1.8	1.1	0.4	3.0		0.6	2.5
20-24 Years	0.3	1.9	0.9	1.5	1.5	1.7	2.9		0.8	1.2
25-29 Years	0.9	0.6	1.2	0.3	0.6	1.1	1.3		0.5	0.5
30-39 Years	0.3	0.6	0.9	1.0	1.4	0.7	0.7		0.1	0.4
40-59 Years	0.2	0.7	1.1	1.2	0.9	0.7	0.5		0.1	0.9
60+ Years	0.1	0.4	0.1	0.3	0.2	0.3	0.7	0.1	0.2	0.3

Data Source: VPD Data Mart; current to February 28, 2025

Tallies reflect confirmed cases, including laboratory-confirmed or epidemiologically-linked events.
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