

British Columbia Provincial Pertussis Summary

September 13, 2024

This bulletin provides updated information on pertussis activity in British Columbia (BC) and elsewhere, including recent trends since the last [BC Provincial Pertussis Summary \(July 2024\)](#).

Summary findings and messages

- 1) Year-to-date (YTD) as of August 31, 2024, pertussis activity in BC remains within historical levels overall and by age group, albeit higher YTD in 2024 (n=122 cases) than full-year totals since the COVID-19 pandemic (n=46, 1, 2, and 113 cases in 2023, 2022, 2021, 2020, respectively).
- 2) Since the last bulletin in July 2024, YTD incidence in BC through August 2024 has increased most among children and adolescents 15-19 years (0.6 to 3.0 per 100,000; 5.0-fold) and 10-14 years (2.1 to 6.3 per 100,000; 3.0-fold). Infants <1 year continue to have the highest YTD incidence (39.0 per 100,000). Milder presentations beyond infancy may contribute to undiagnosed cases, unrecognized community transmission and surveillance under-ascertainment. As community exposures may increase with return to school, clinicians are encouraged to consider pertussis testing if indicated.
- 3) Of the cases with known immunization status to date, most are not up to date on pertussis immunizations. Proactive measures to mitigate the pertussis risk include reinforcing up-to-date vaccination, notably for the very young and for pregnant people to reduce the risk of severe outcomes in infants and especially newborns, and proactive regional outreach to communities where vaccination coverage may be suboptimal.

Updated BC observations as of August 31, 2024

As of August 31, 2024 (epi-week 35), BC health authorities have reported 122 laboratory-confirmed or epidemiologically-linked pertussis cases year-to-date (YTD), exceeding full year tallies in 2023 (n=46), 2022 (n=1), 2021 (n=2), and 2020 (n=113) ([Figure 1A](#)). However, the 2024 YTD incidence of 2.1 cases per 100,000 remains lower than incidences during the same ~35-week YTD period of 2014 to 2019, ranging 4.2 to 14.6 per 100,000 ([Figure 1B](#)). Regional incidence continues to be highest in Northern and Interior Health Authorities ([Figure 1B](#)), with a recent increase in cases in Vancouver Island Health Authority ([Figure 1B](#); [Figure 2](#)). BC case totals for August indicate an increase relative to earlier spring/summer activity in 2024, but still within historic range for August tallies from 2014 to 2019 ([Figure 3](#)). Age-specific incidences also remain within the range of YTD historic levels since 2014 ([Figure 4B](#)). Since the [last BCCDC bulletin spanning January 1 to June 27 2024](#), YTD age-specific incidence through August 2024 has increased most among 15-19 year olds (0.6 to 3.0 per 100,000; 5.0-fold) and 10-14 year olds (2.1 to 6.3 per 100,000; 3.0-fold) ([Figure 4A](#); [Figure 4B](#)), consistent with elevated adolescent pertussis activity reported elsewhere in 2024¹⁻³. Infants <1 year continue to have the highest YTD incidence (39.0 per 100,000). Milder presentations beyond infancy may contribute to undiagnosed cases, unrecognized community transmission, and surveillance under-ascertainment. Observations based on passive surveillance and comparisons over time and between regions are also subject to variation in clinical testing practices that should be taken into account when interpreting these findings. Among pertussis cases with reported immunization status in BC, most were considered not up to date with pertussis immunizations. The BC Centre for Disease Control (BCCDC) is aware of three pertussis hospitalizations thus far in 2024, including two infants and a child 5-9 years of age, but has not been informed of any pertussis deaths thus far in 2024.

Background context

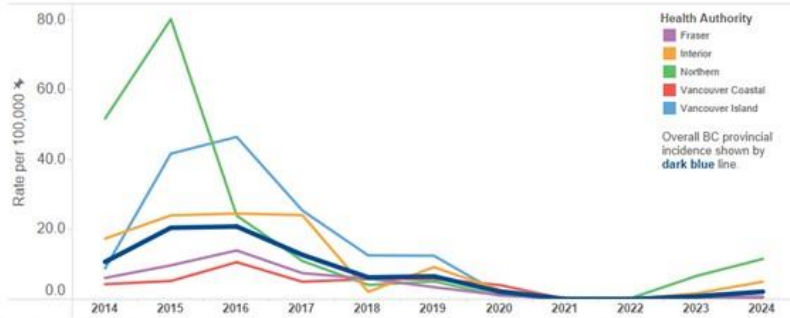
In BC, as elsewhere, pertussis is an endemic disease with cyclical peaks occurring every 2-5 years⁴. Infants <1 year are at highest risk of severe disease, including hospitalization, intensive care unit admission and death, with the highest risk occurring among infants <3 months of age⁴. Because of their more severe presentation, pertussis in infants, compared to other age groups, 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 dose⁴. In 2020, BC joined other provinces in publicly-funding an additional Tdap dose for pregnant people each pregnancy, ideally between 27-32 weeks of gestation in order to protect newborns before they can receive a first dose directly⁵.

Between 2004 and 2011, BC experienced trough pertussis levels, followed by cyclical peaks in 2012, 2015, and 2016, which subsequently subsided between 2017 and 2019 ([Figure 1A](#))⁴. As elsewhere, BC may have been spared an expected cyclical peak during the period that COVID-19 pandemic mitigation measures were in place beginning in March 2020⁶⁻⁸, with much reduced *B. pertussis* detections thereafter ([Figure 1A](#)). Following the relaxation of pandemic mitigation measures, other areas in Canada and internationally continue to experience resurgent activity, with some areas indicating pertussis activity surpassing levels from prior peak seasons. Some reports have also highlighted lower vaccine coverage as potentially contributing to increased activity⁹⁻¹¹. The extent to which recent activity may be considered expected or exceptional awaits more detailed examination (e.g., for consistency in case definitions, testing and monitoring periods or approaches over time). Updated national pertussis surveillance data for Canada remain pending¹².

References

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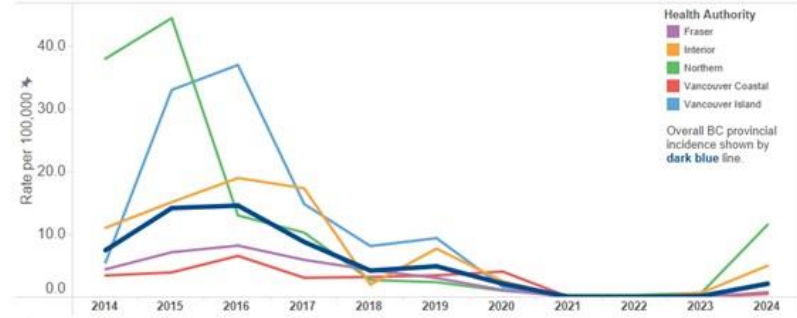
Figure 1A. Annual incidence (per 100,000)
BC overall and by Health Authority



Annual incidence (per 100,000)											
BC	10.9	20.5	20.9	12.7	6.3	6.6	2.2	0.0	0.0	0.8	2.1
Fraser	6.1	9.7	14.0	7.5	5.9	3.5	1.2			0.2	0.8
Interior	17.4	24.0	24.6	24.1	2.1	9.2	2.7			1.7	5.0
Northern	51.8	80.3	24.0	11.0	4.1	5.1	1.0	0.3	0.3	6.7	11.5
Vancouver Coastal	4.3	5.2	10.6	5.0	5.8	5.8	4.1			0.2	0.5
Vancouver Island	8.8	41.7	46.5	25.4	12.5	12.5	1.6	0.1		0.4	1.9
Annual case counts											
BC	513	979	1,015	627	315	335	113	2	1	46	122
Fraser	106	171	252	137	110	66	23			5	17
Interior	129	181	189	189	17	75	22			15	45
Northern	150	233	70	32	12	15	3	1	1	20	35
Vancouver Coastal	50	61	126	60	70	72	51			2	7
Vancouver Island	69	330	376	209	105	106	14	1		4	18

Data Source: VPD Data Mart; current to August 31, 2024

Figure 1B. YTD (Jan 1 – Aug 31) incidence (per 100,000)
BC overall and by Health Authority

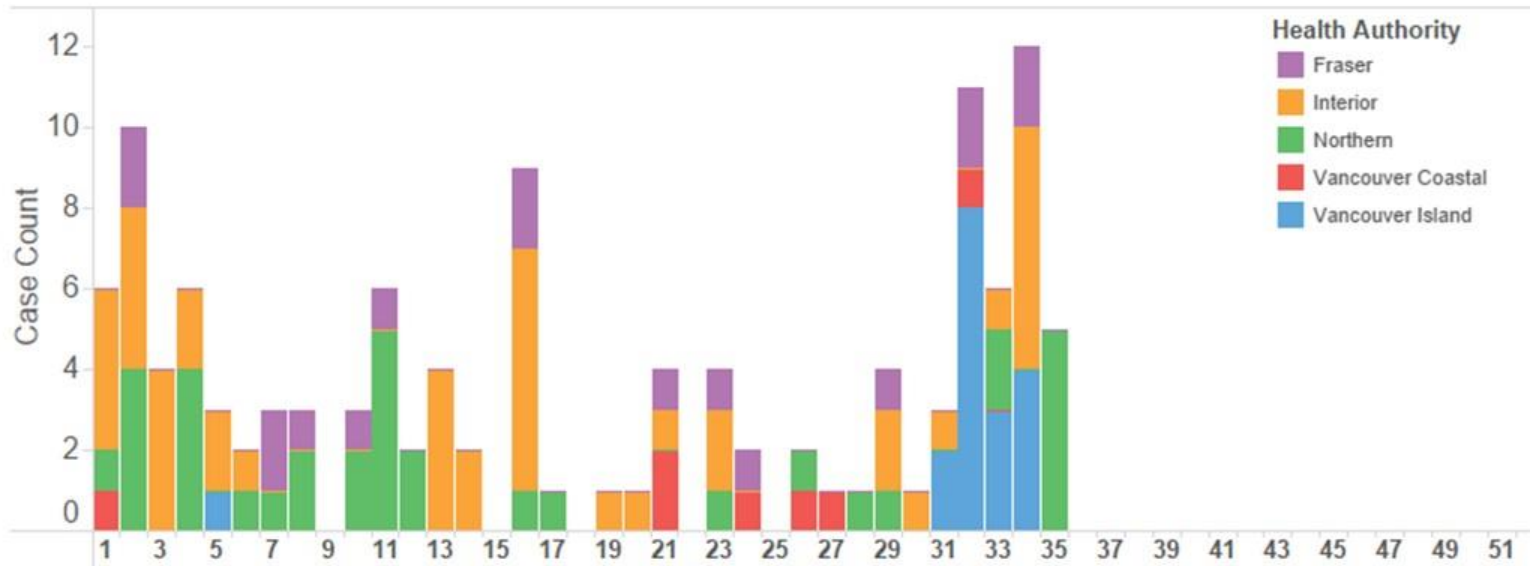


YTD incidence (per 100,000)											
BC	7.7	14.1	14.6	8.8	4.2	4.9	2.1	0.0	0.0	0.2	2.1
Fraser	4.4	7.2	8.2	5.9	4.3	3.0	1.1			0.0	0.8
Interior	11.0	14.6	18.7	17.3	2.0	7.7	2.5			0.7	5.0
Northern	38.0	44.4	13.0	10.3	2.7	2.4	1.0	0.3	0.3	0.7	11.5
Vancouver Coastal	3.4	3.9	6.6	3.1	3.2	3.5	4.1				0.5
Vancouver Island	5.5	32.9	36.9	14.8	8.1	9.4	1.6			0.1	1.9
YTD case counts											
BC	361	673	708	434	212	252	111	1	1	10	122
Fraser	77	126	148	109	81	58	22			1	17
Interior	82	110	144	136	16	63	21			6	45
Northern	110	129	38	30	8	7	3	1	1	2	35
Vancouver Coastal	40	46	78	37	39	43	51				7
Vancouver Island	43	260	298	122	68	80	14			1	18

Data Source: VPD Data Mart; current to August 31, 2024

Tallies reflect confirmed cases, including laboratory-confirmed or epidemiologically-linked events.
For 2024, data are for the period between January 1 and August 31, 2024.

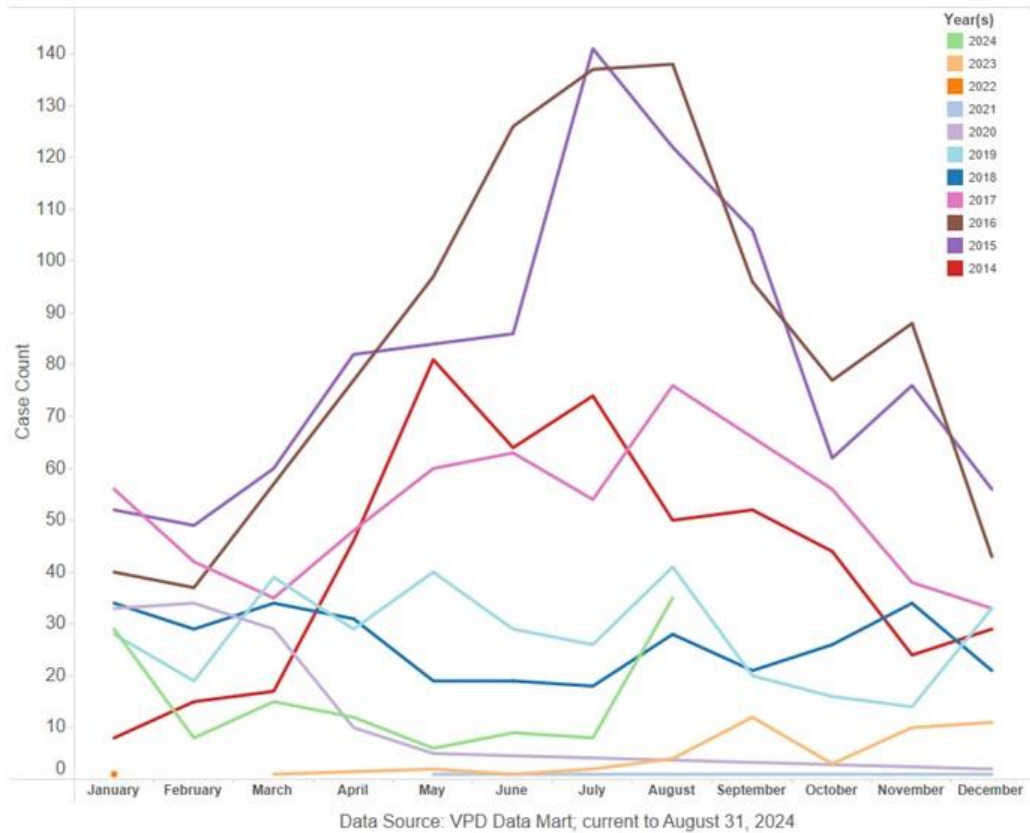
Figure 2. Case counts by epi-week and Health Authority



Data Source: VPD Data Mart; current to August 31, 2024

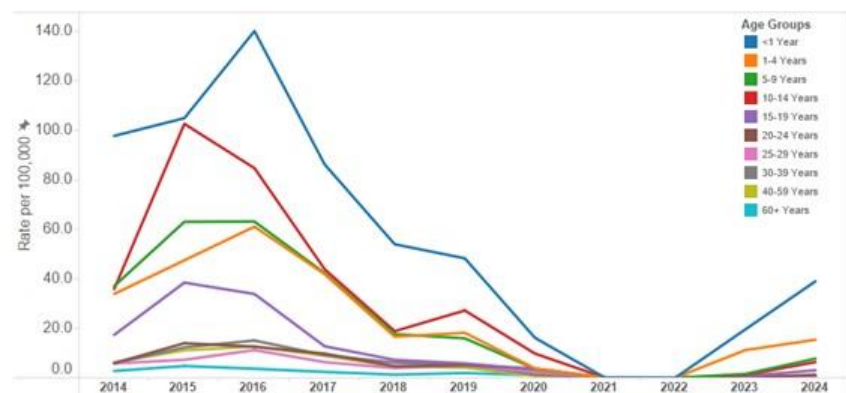
Tallies reflect confirmed cases, including laboratory-confirmed or epidemiologically-linked events. For 2024, data are for the period between January 1 and August 31, 2024.

Figure 3. Case counts by month and year, BC



Tallies reflect confirmed cases, including laboratory-confirmed or epidemiologically-linked events. For 2024, data are for the period between January 1 and August 31, 2024.

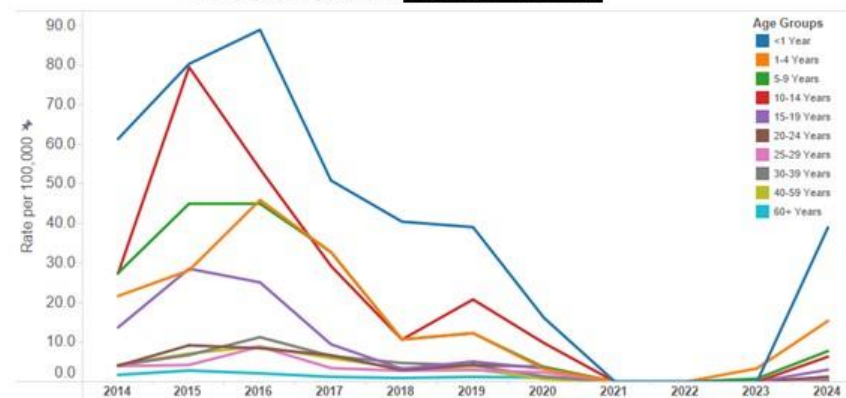
**Figure 4A. Annual incidence (per 100,000)
BC overall and by Age Group**



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Annual incidence (per 100,000)											
BC	10.9	20.5	20.9	12.7	6.3	6.6	2.2	0.0	0.0	0.8	2.1
<1 Year	97.7	104.9	140.1	86.2	54.0	48.3	16.2			19.6	39.0
1-4 Years	33.9	47.5	60.5	41.9	16.6	18.2	3.8			11.2	15.4
5-9 Years	37.1	62.6	63.1	42.3	17.7	15.9	3.6			1.5	7.7
10-14 Years	35.9	102.1	84.7	43.9	18.8	27.2	9.8			1.1	6.3
15-19 Years	16.6	38.4	33.5	12.7	6.9	5.8	3.3			0.7	3.0
20-24 Years	5.9	14.0	12.6	9.8	4.7	5.1	3.7				1.3
25-29 Years	5.5	7.3	11.2	6.3	3.9	4.8	2.4			0.2	0.9
30-39 Years	5.6	12.1	15.1	9.2	6.2	5.4	1.3	0.1		0.4	0.3
40-59 Years	6.1	11.1	12.6	8.9	4.5	4.1	0.7			0.1	0.9
60+ Years	2.7	4.8	3.7	2.4	1.3	1.9	1.0	0.1	0.1	0.2	0.5

Data Source: VPD Data Mart, current to August 31, 2024

**Figure 4B. YTD (Jan 1 – Aug 31) incidence (per 100,000)
BC overall and by Age Group**



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
YTD incidence (per 100,000)											
BC	7.7	14.1	14.6	8.8	4.2	4.9	2.1	0.0	0.0	0.2	2.1
<1 Year	61.4	80.3	88.9	50.9	40.5	39.1	16.2				39.0
1-4 Years	21.7	28.1	45.4	32.8	10.7	12.3	3.2			3.4	15.4
5-9 Years	27.5	44.6	45.0	32.8	10.7	12.3	3.6			0.8	7.7
10-14 Years	27.4	79.1	53.8	29.3	10.6	20.8	9.8				6.3
15-19 Years	13.0	28.6	24.8	9.5	3.3	5.1	3.3				3.0
20-24 Years	4.0	9.2	8.5	6.7	2.9	4.3	3.7				1.3
25-29 Years	3.7	4.2	8.9	3.5	2.8	2.7	2.4				0.9
30-39 Years	3.8	6.8	11.3	6.5	4.7	4.1	1.3			0.2	0.3
40-59 Years	4.0	7.1	8.9	5.9	3.5	3.2	0.7				0.9
60+ Years	1.7	2.8	2.1	1.2	1.0	1.2	1.0	0.1	0.1		0.5

Data Source: VPD Data Mart, current to August 31, 2024

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