CDC

BC Centre for Disease Control
An agency of the Provincial Health Services Authority

Pertussis Vaccine Uptake in the First Year of Life

2018-2020

December 1, 2021

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Data Source and Definitions

Data Source
Panorama, BC Centre for Disease Control

Years
2018-2020

Coverage reported for any given year reflects uptake among children who turned 1 year old during that calendar year (i.e., 2020 results are for children born in 2019).

Results presented in this report are based on reporting in Panorama to:
- January 15, 2021 for all included health authorities for 2020 statistics,
- January 16, 2020 for all included health authorities for 2019 statistics, and
- March 18, 2019 for Northern Health Authority and February 27, 2019 for Fraser, Interior and Vancouver Island Health Authorities for 2018 statistics.

Up-to-date for Age Definitions

Milestone	Definition
3 months	Received at least one valid dose of pertussis-containing vaccine by 3 months of age
7 months	Received at least three valid doses of pertussis-containing vaccine by 7 months of age
12 months	Received at least three valid doses of pertussis-containing vaccine by 12 months of age

All analyses were conducted using business rules which calculated ages and time intervals at receipt of immunization. Each dose was counted as a valid dose only if given at or after the earliest eligible age, or at a time interval equal to or greater than the shortest recommended interval (see Note #3).

Caution
Data in this report should be interpreted with caution. Please refer to the Notes for additional information.

Percent of Children Up-to-date for Pertussis

British Columbia

Province	Milestone	Year		
		2018	2019	2020
British Columbia BC *	3 months	83%	84%	86%
	7 months	64%	64%	65%
	12 months	83%	84%	83%

* Does not include Vancouver Coastal Health Authority, which accounts for approximately 22% of 1-year olds in BC in 2018-2020 (see Notes).
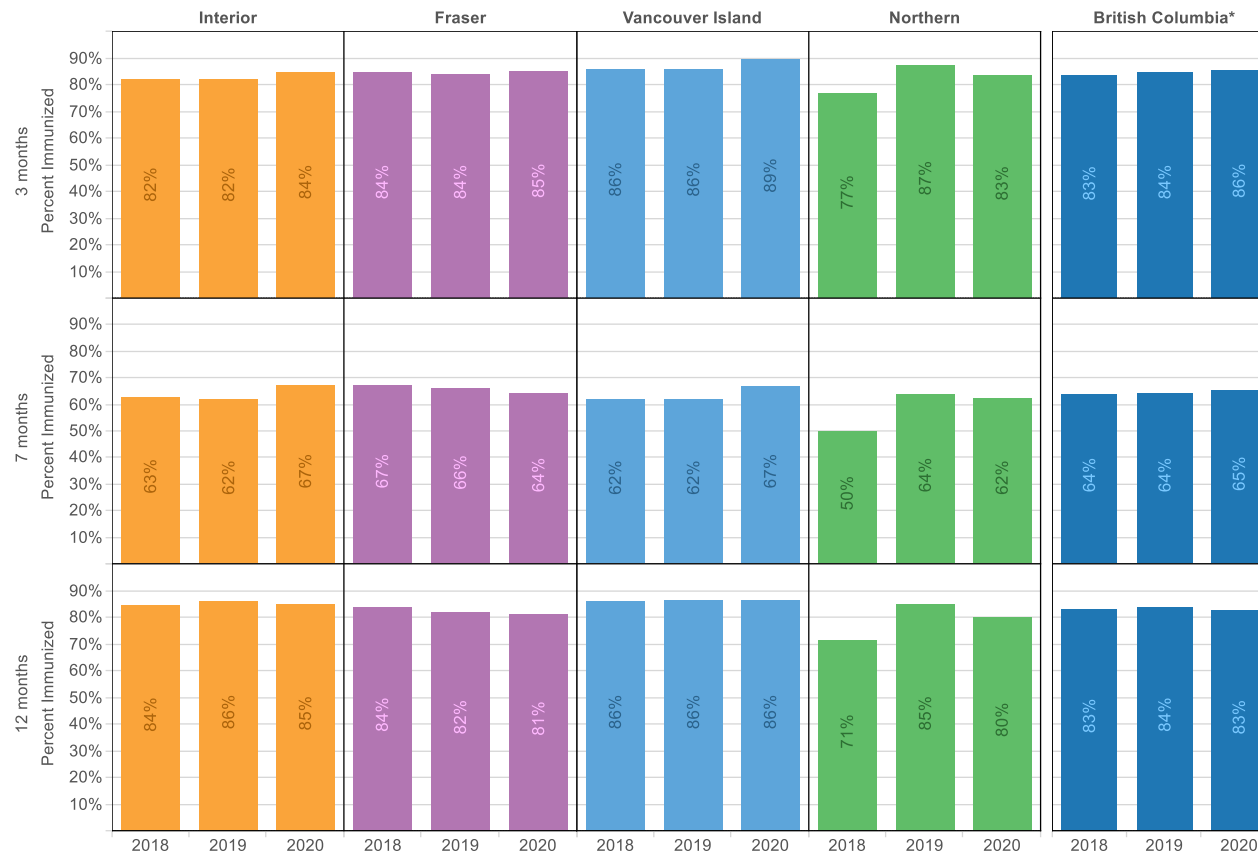
Health Authorities

Health Authority	Milestone	Year		
		2018	2019	2020
Interior Health IHA	3 months	82%	82%	84%
	7 months	63%	62%	67%
	12 months	84%	86%	85%
Fraser Health FHA	3 months	84%	84%	85%
	7 months	67%	66%	64%
	12 months	84%	82%	81%
Island Health VIHA	3 months	86%	86%	89%
	7 months	62%	62%	67%
	12 months	86%	86%	86%
Northern Health NHA	3 months	77%	87%	83%
	7 months	50%	64%	62%
	12 months	71%	85%	80%

Health Service Delivery Areas

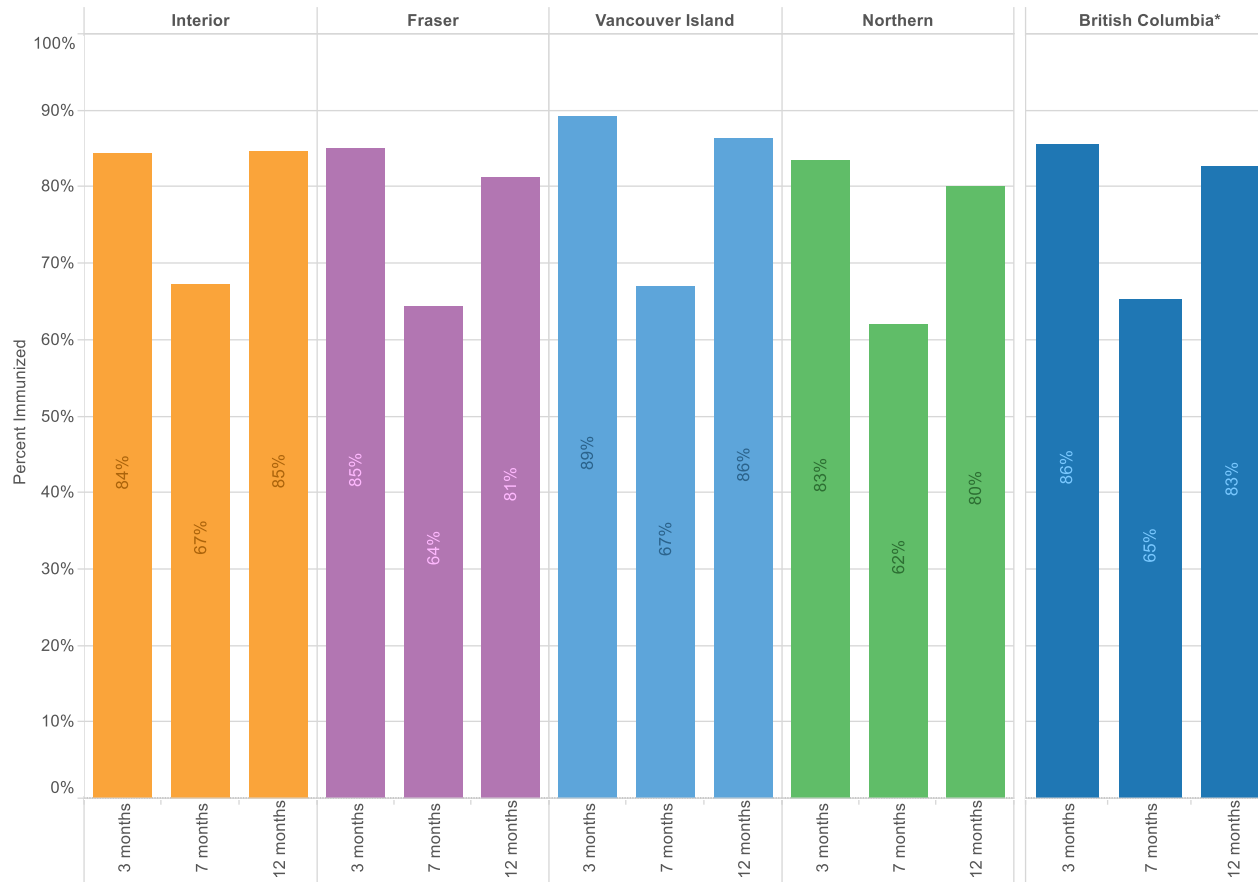| Health Authority	Health Service Delivery Area	Milestone	Year		
			2018	2019	2020
Interior Health IHA	**East Kootenay EK**	3 months	82%	85%	85%
		7 months	64%	66%	67%
		12 months	86%	88%	88%
	Kootenay Boundary KB	3 months	80%	78%	76%
		7 months	55%	59%	58%
		12 months	79%	80%	76%
	Okanagan OK	3 months	82%	83%	84%
		7 months	66%	66%	69%
		12 months	84%	87%	85%
	Thompson Cariboo Shuswap TCS	3 months	83%	81%	86%
		7 months	59%	54%	68%
		12 months	85%	86%	85%
Fraser Health FHA	**Fraser East FE**	3 months	82%	83%	85%
		7 months	64%	64%	62%
		12 months	83%	84%	82%
	Fraser North FN	3 months	84%	82%	84%
		7 months	66%	66%	66%
		12 months	82%	79%	79%
	Fraser South FS	3 months	86%	85%	86%
		7 months	69%	67%	65%
		12 months	85%	83%	82%
Island Health VIHA	**South Vancouver Island SVI**	3 months	89%	91%	92%
		7 months	67%	70%	74%
		12 months	90%	90%	90%
	Central Vancouver Island CVI	3 months	83%	81%	86%
		7 months	56%	54%	57%
		12 months	81%	81%	81%
	North Vancouver Island NVI	3 months	82%	80%	88%
		7 months	58%	56%	66%
		12 months	83%	85%	86%
Northern Health NHA	**Northwest NW**	3 months	77%	88%	82%
		7 months	52%	67%	59%
		12 months	70%	84%	76%
	Northern Interior NI	3 months	79%	89%	88%
		7 months	51%	65%	66%
		12 months	74%	86%	85%
	Northeast NE	3 months	72%	84%	78%
		7 months	47%	60%	59%
		12 months	68%	85%	76%

Figures

Percent of Children Up-to-date for Pertussis by Health Authority, Year and Milestone
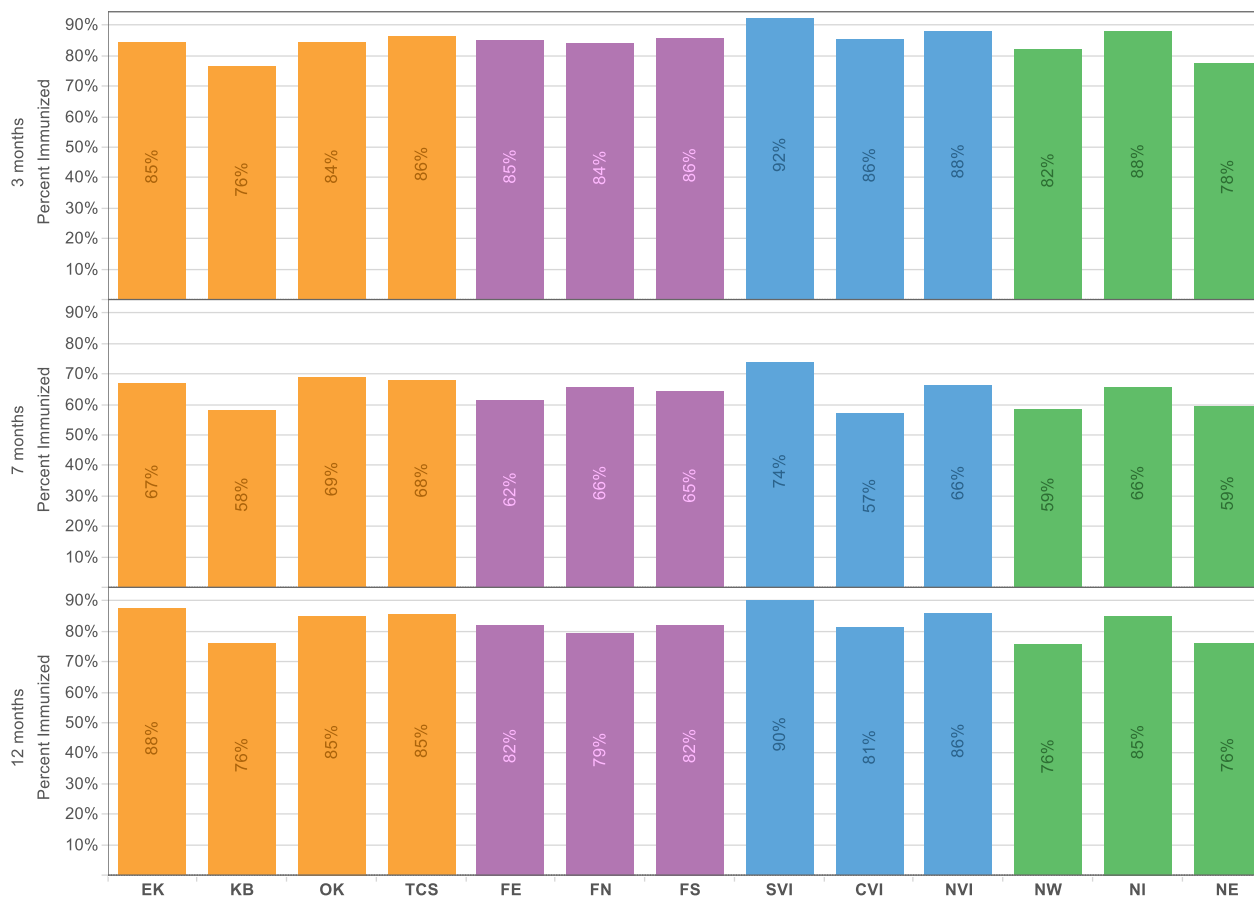## British Columbia, 2018-2020

* Does not include Vancouver Coastal Health Authority, which accounted for approximately 22% of 1-year olds in BC in 2019 (see Notes).

Percent of Children Up-to-date for Pertussis by Health Authority and Milestone
British Columbia, 2020

* Does not include Vancouver Coastal Health Authority, which accounted for approximately 22% of 1-year olds in BC in 2019 (see Notes).

Percent of Children Up-to-date for Pertussis by Health Service Delivery Area and Milestone, British Columbia, 2020

Notes

1. **Numerators:**

   Number of children with active records in Panorama who were born in the previous calendar year and were up-to-date for pertussis by the specified age milestone in the Interior, Vancouver Island, Fraser, and Northern Health Authorities.

2. **Denominators:**

   All children with active records in Panorama in the Interior, Vancouver Island, Fraser, and Northern Health Authorities who were born in the previous calendar year.

3. **Minimum Intervals Between Eligible Doses:**

   Immunization coverage analyses in British Columbia are conducted using business rules which calculate ages and time intervals at receipt of immunization. Each dose is counted as a valid dose only if given at or after the earliest eligible age, or at a time interval equal to or greater than the shortest recommended interval. The earliest age at which a child can receive a valid dose of pertussis-containing vaccine is 42 days. The shortest valid intervals between doses 1 and 2 and doses 2 and 3 are both 28 days.

4. Vancouver Coastal Health Authority (VCHA) provides their early childhood coverage data through a separate mechanism. While immunizations provided to infants by public health immunizers in VCHA are captured in the health authority's electronic information system (called PARIS), the majority of VCHA infants are immunized by physicians. The BC public health legislation does not require reporting of immunization administered by community vaccine providers to public health, and this information is not systematically obtained by VCHA from community vaccine providers, although this information is obtained under a voluntary scheme by other regions. VCHA examines early childhood immunization coverage data by the use of periodic coverage surveys. Pertussis uptake in the first year of life will be assessed as part of the upcoming survey of the immunization status of children born in 2015. Approximately 22% of 1-year olds in BC in 2018-2020 lived in VCHA.

5. In July 2013, Northern Health Authority began using the Community Medical Office Information System (CMOIS) to record immunizations at point of care, with subsequent later data entry into Panorama. As well, the frequency of reminders/ recalls from birth to the 2nd birthday has been reduced from four to one. These two factors may contribute to both artificial and potentially real declines in coverage.

6. Children with Panorama records indicating that they lived in BC, but did not have a specific health region assigned (i.e., the client health region was reported as "Unknown City / Town - BC" or "Unknown HSDA – [health authority name]") were excluded from this analysis. This affected 45 children in 2018, 9 in 2019 and 18 in 2020.

7. Data need to be interpreted with caution for the following reasons:

   a. To be considered up-to-date for age, documentation of every dose in the provincial immunization registry (Panorama) is required. Some children may have received doses that have not been documented in the immunization registry. Most regions make their best efforts to obtain vaccination records pertaining to physician-delivered immunizations. There can be a delay in obtaining these records from physicians, which can result in delay of data entry. Both these issues will artificially lower the rates of vaccine coverage.

   b. Data completeness with respect to children residing in the Health Authority may vary. Some regions enter all children born in their region into the registry. Other regions enter only those children into the system that present for service. In addition, First Nations children may not be completely captured in the registry system, as on-reserve birth records and immunizations may not be entered into Panorama. It is our opinion based on the difference found in the 2001 cohort of children followed up in the Medical Services Plan (MSP) study, that these numbers represent limitations in the data population of our registry system. In March 2020 Client Roster data were imported into Panorama from the BC Ministry of Health, and

biweekly updates from the Ministry of Health RAPID system (Maximus) were initiated. This should provide more complete information on the entire BC population in Panorama.

c. Records with no or inadequate immunizations recorded may reflect children who have moved out of the province or died. When public health is not aware of these events, they cannot update the Panorama records to reflect the status of these children. Records reported by provinces with reciprocal agreements with MSP for individuals who have moved out of BC and established health insurance in other Canadian jurisdictions are inactivated through the new RAPID system process outlined above.

8. Abbreviations

Health Authorities:

FHA	Fraser Health Authority	VCHA	Vancouver Coastal Health Authority
IHA	Interior Health Authority	VIHA	Vancouver Island Health Authority
NHA	Northern Health Authority		

Health Service Delivery Areas:

EK	East Kootenay	VAN	Vancouver
KB	Kootenay Boundary	NSCG	North Shore / Coast Garibaldi
OK	Okanagan	SVI	South Vancouver Island
TCS	Thompson Cariboo Shuswap	CVI	Central Vancouver Island
FE	Fraser East	NVI	North Vancouver Island
FN	Fraser North	NW	Northwest
FS	Fraser South	NI	Northern Interior
RICH	Richmond	NE	Northeast

For an explanation of BC Health Authorities, please visit: http://www.health.gov.bc.ca/socsec/index.html