

## Pneumococcal Disease (invasive)

In 2016, 480 cases of invasive pneumococcal disease (IPD) were reported in BC (10.1 per 100,000 population), higher than the observed BC rates from 2008 to 2015. Serotype/subtype (henceforth termed serotype) results were available for 410 (85%) cases. Among cases 65 years of age and older with results available, 66% (90/136) were due to serotypes covered by the pneumococcal polysaccharide 23-valent vaccine (PPV-23).

Rates were highest among infants under 1 year of age (26.9 per 100,000 population), higher than the rate observed in 2015 for this age group (15.9 cases per 100,000 population).

Fifty-three pediatric ( $\leq 16$  years of age) cases were reported, including 34 cases  $\leq 5$  years of age. Nine percent (5/53) of pediatric cases presented with meningitis. Three fatal pediatric cases were reported, with 2 of these in children  $\leq 5$  years of age.

Serotype/subtype results were available for 91% (31/34) of cases among children  $\leq 5$  years of age. Of these 31 cases, 23 (74%) were due to serotypes not covered by conjugate vaccines and 8 (26%) were due to serotypes covered by pneumococcal conjugate 13-valent vaccine (PCV-13).

The serotypes, age, and documented immunizations prior to onset of illness were reviewed against the BC immunization schedule for healthy and medically high-risk children to determine preventability by the current pneumococcal immunization program for children  $\leq 5$  years of age.

Twenty-five cases were not preventable:

- Twenty cases were due to serotypes not covered by PCV-13
- Two cases due to serotype 3 were vaccine failures in children fully immunized with PCV-13
- Two cases occurred in infants too young to have been immunized

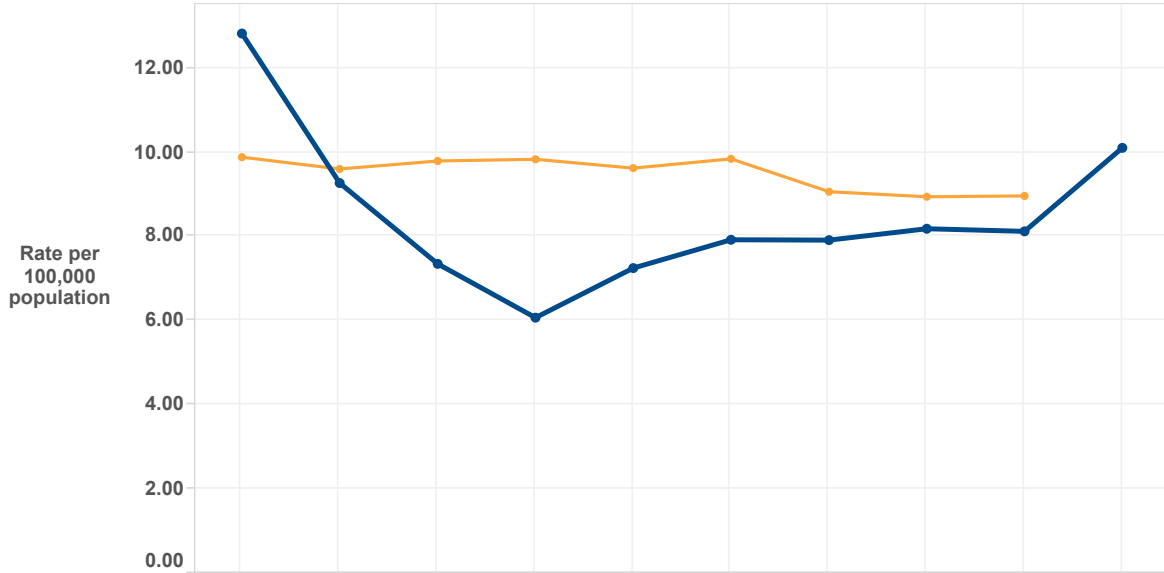
- One case due to a PCV-13 preventable serotype occurred in an unimmunized child with documented parental refusal to immunization.

Six cases were preventable and are considered program failures:

- Two cases were in unimmunized children due to serotypes covered by PCV-13 (3 and 19A) with no exemptions or medical contraindications to pneumococcal vaccine recorded
- Three cases due to PPV-23 preventable serotypes (8, 22F, 33F) were reported in medically high-risk children older than 2 years of age who had not received a dose of PPV-23 vaccine and without exemptions or medical contraindications to pneumococcal vaccine recorded
- One case due to serotype 19F was reported in a medically high-risk child who received a 2+1 series of PCV-13, but had not received an additional dose of PCV-13 at 6 months of age nor a dose of PPV-23

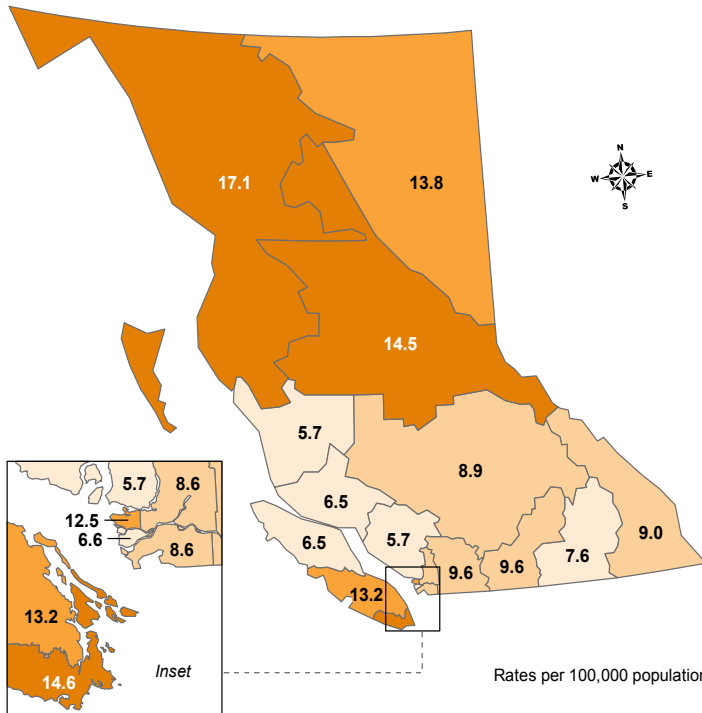


**29.1 Pneumococcal Disease (invasive) Rates by Year, 2007-2016**

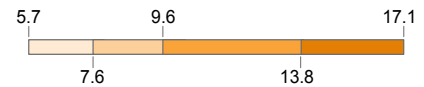


	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Reports	550	403	324	271	326	360	363	380	381	480
BC Rate	12.82	9.27	7.35	6.07	7.25	7.92	7.91	8.18	8.12	10.10
Canada Rate	9.88	9.60	9.79	9.83	9.62	9.84	9.06	8.94	8.96	

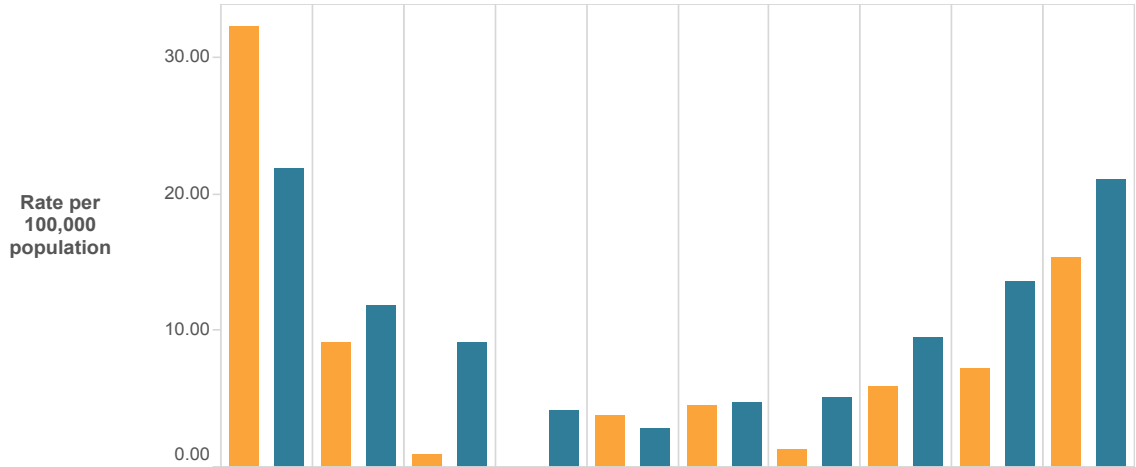
**29.2 Pneumococcal Disease (invasive) Rates by HSDA, 2016**



ID	Health Service Delivery Area	Cases	Rate
11	East Kootenay	7	9.0
12	Kootenay Boundary	6	7.6
13	Okanagan	35	9.6
14	Thompson Cariboo Shuswap	20	8.9
21	Fraser East	29	9.6
22	Fraser North	57	8.6
23	Fraser South	70	8.6
31	Richmond	14	6.6
32	Vancouver	84	12.5
33	North Shore/Coast Garibaldi	16	5.7
41	South Vancouver Island	56	14.6
42	Central Vancouver Island	36	13.2
43	North Vancouver Island	8	6.5
51	Northwest	12	17.1
52	Northern Interior	20	14.5
53	Northeast	10	13.8



**29.3 Pneumococcal Disease (invasive) Rates by Age Group and Sex, 2016**



		<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+
<b>Reports</b>	<b>Female</b>	7	8	1	0	5	7	2	19	49	94
	<b>Male</b>	5	11	11	5	4	8	8	30	89	117
	<b>Total</b>	12	19	12	5	9	15	10	49	138	211
<b>BC Rate</b>	<b>Female</b>	32.29	9.08	0.89	0.00	3.78	4.48	1.26	5.87	7.22	15.40
	<b>Male</b>	21.80	11.81	9.08	4.19	2.85	4.69	5.04	9.46	13.55	21.03
	<b>Total</b>	26.90	10.48	5.13	2.16	3.30	4.59	3.15	7.65	10.33	18.08