Supplemental material

Table S1: Annual incidence of invasive pneumococcal disease cases per 100,000 population in Canada by age group, 2010–2020[a]

Year	Age group (years)										All ages	Younger than 5	5 and older
	Younger than 1	1–4	5–9	10–14	15–19	20–24	25–29	30–39	40–59	Older than 60			
2009	27.8	18.7	5.8	1.6	1.8	2.4	3.5	5.5	8.9	22.3	9.8	20.8	9.2
2010	25.1	16.5	4.8	1.8	1.3	1.9	3.1	5.2	9.0	23.4	9.8	18.4	9.4
2011	20.7	15.5	5.3	2.5	1.7	1.4	3.1	5.4	9.2	21.8	9.6	16.6	9.3
2012	18.3	13.6	4.3	2.5	1.6	2.5	4.0	5.1	9.2	22.9	9.9	14.5	9.6
2013	18.7	11.2	3.8	1.5	1.3	1.5	2.8	4.6	8.4	21.9	9.1	12.7	8.9
2014	17.6	10.9	3.7	1.1	1.0	1.7	2.6	4.4	8.6	21.2	9.0	12.2	8.8
2015	14.4	9.8	3.9	1.2	1.5	1.9	2.8	4.5	8.9	20.6	9.0	10.7	8.9
2016	15.7	12.1	3.6	1.3	1.7	2.3	2.6	4.8	9.0	19.9	9.1	12.8	9.0
2017	15.4	12.3	3.5	1.3	1.4	1.5	2.8	5.3	9.0	21.4	9.5	12.9	9.4
2018	11.9	12.6	3.7	1.2	1.2	1.6	3.6	5.7	11.5	23.4	10.9	12.5	10.8
2019	12.8	11.2	3.5	1.2	1.3	2.1	2.8	6.1	10.3	21.6	10.1	11.5	10.0
2020	8.2	5.5	1.8	0.5	1.0	1.4	2.7	3.9	7.2	11.1	5.9	6.0	5.9

[a] Data for 2020 is preliminary; one province has not yet provided data

Figure S1: Clinical isolation site of invasive *Streptococcus pneumoniae* isolates collected in 2020, by age
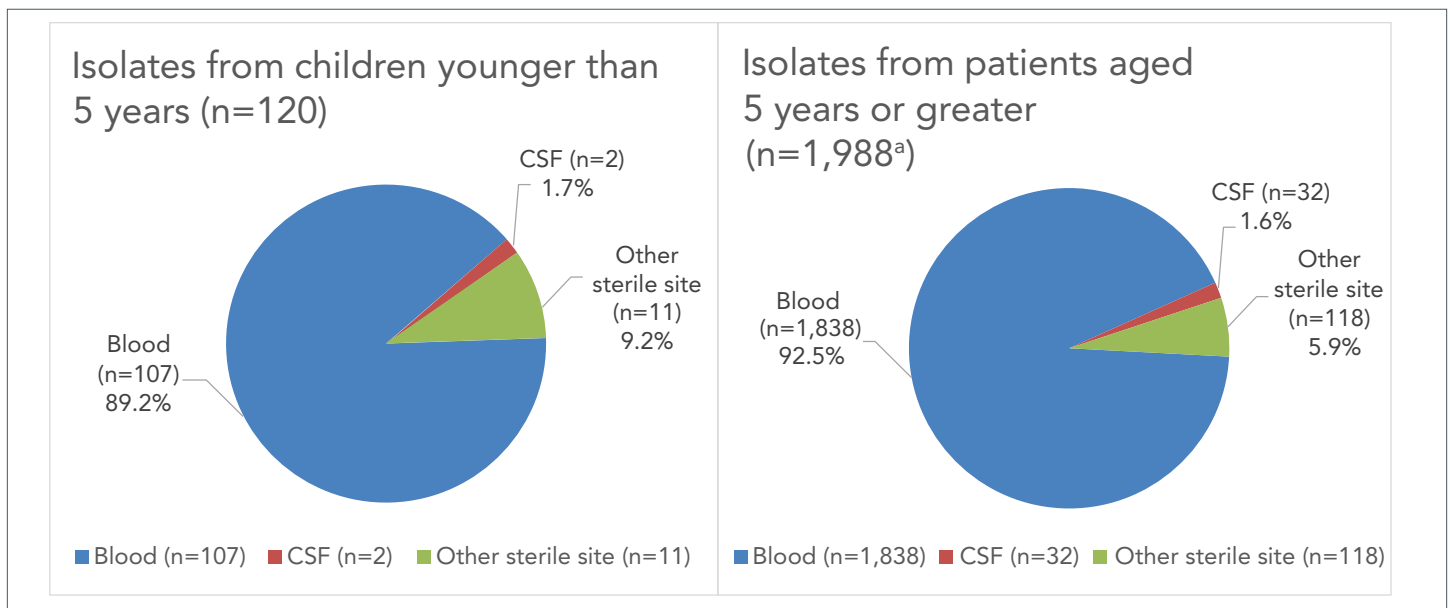
Abbreviation: CSF, cerebrospinal fluid
[a] Includes 15 isolates with age not available. Other sterile sites include synovial fluid, pleural fluid, peritoneal fluid, tissue, deep tissue, abscess or fluid, vitreous humor, biopsy and unknown clinical sources

Figure S2: Percentage of invasive *Streptococcus pneumoniae* isolates from blood in 2020, by serotype
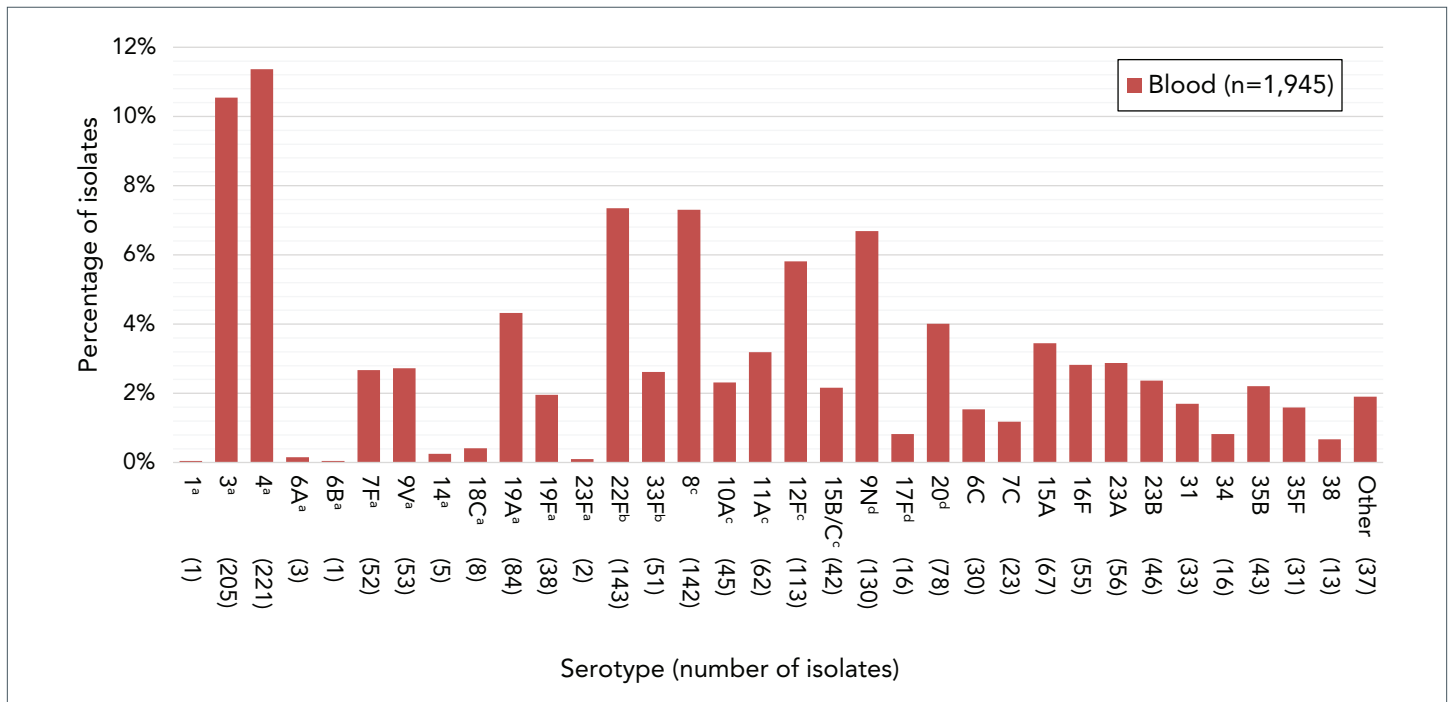
[a] Component of PCV13
[b] Component of PCV15
[c] Component of PCV20
[d] Component of PPV23
Note: Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Figure S3: Percentage of invasive *Streptococcus pneumoniae* isolates from cerebrospinal fluid in 2020, by serotype
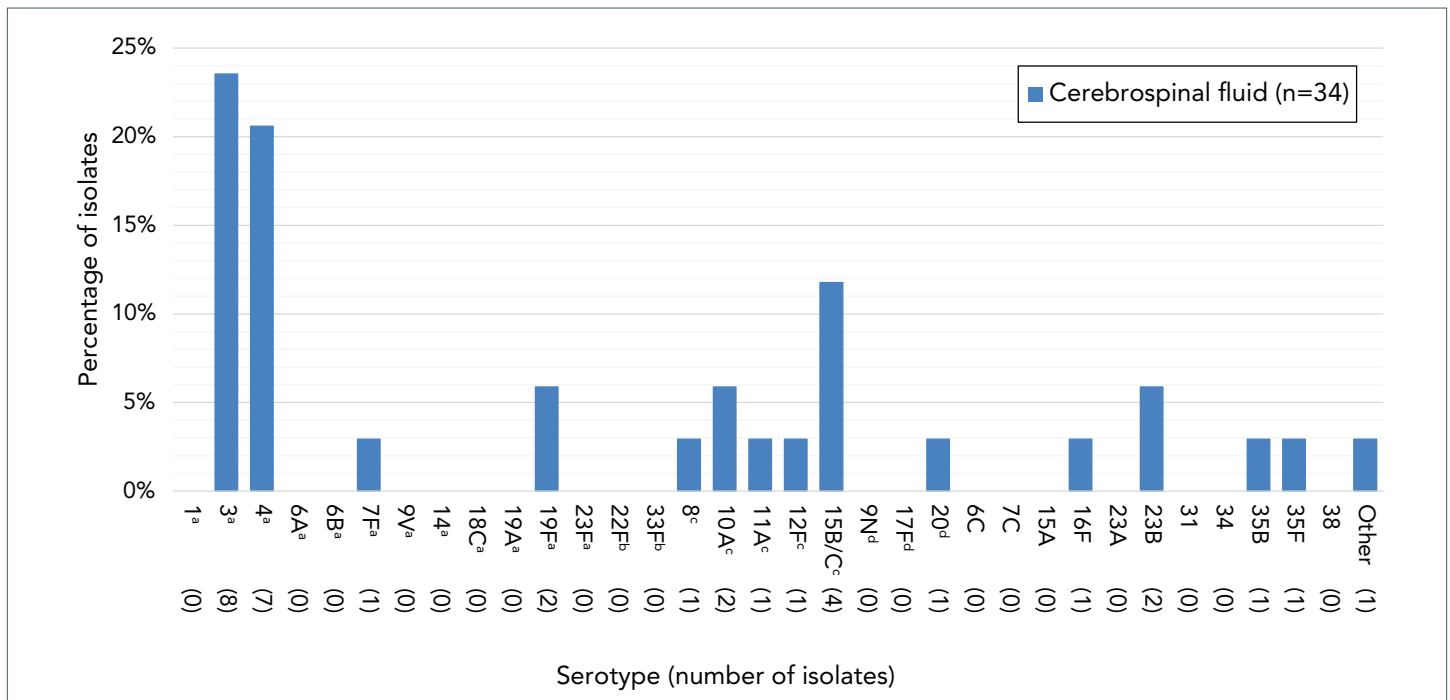
[a] Component of PCV13
[b] Component of PCV15
[c] Component of PCV20
[d] Component of PPV23
Note: Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Figure S4: Percentage of invasive *Streptococcus pneumoniae* isolates from other sterile sites[a] in 2020, by serotype
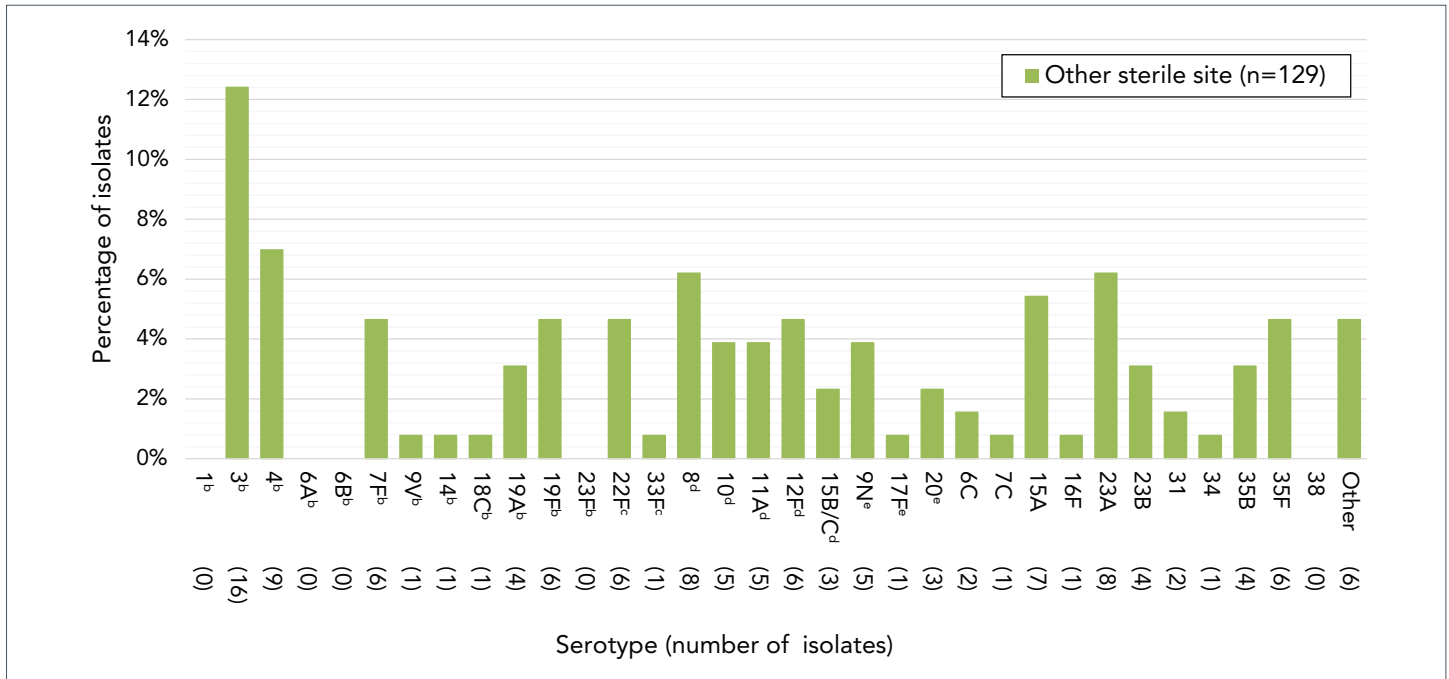
[a] Other sterile sites include synovial fluid, pleural fluid, peritoneal fluid, tissue, deep tissue, abscess or fluid, vitreous humor, biopsy and unknown clinical sources
[b] Component of PCV13
[c] Component of PCV15
[d] Component of PCV20
[e] Component of PPV23
Note: Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Figure S5: Prevalence of invasive *Streptococcus pneumoniae* serotypes in those younger than two years old, 2016–2020

[a] Component of PCV13
[b] Component of PCV15
[c] Component of PCV20
[d] Component of PPV23
[e] Number of isolates for 2016, 2017, 2018, 2019 and 2020 respectively
Note: Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Figure S6: Prevalence of invasive *Streptococcus pneumoniae* serotypes in those 2–4 years old, 2016–2020
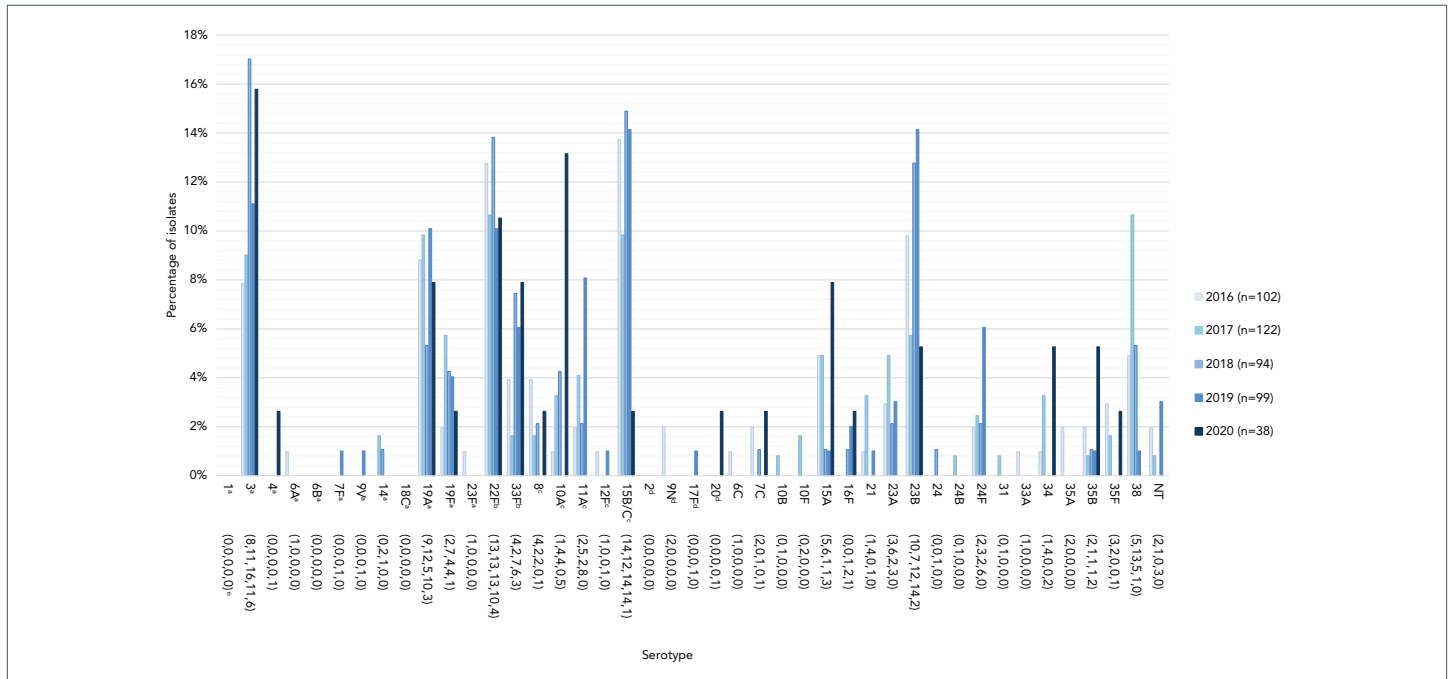
ᵃ Component of PCV13
ᵇ Component of PCV15
ᶜ Component of PCV20
ᵈ Component of PPV23
ᵉ Number of isolates for 2016, 2017, 2018, 2019 and 2020 respectively
Note: Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Figure S7: Prevalence of invasive *Streptococcus pneumoniae* serotypes in those 5–14 years old, 2016–2020

ᵃ Component of PCV13
ᵇ Component of PCV15
ᶜ Component of PCV20
ᵈ Component of PPV23
ᵉ Number of isolates for 2016, 2017, 2018, 2019 and 2020 respectively
Note: Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Figure S8: Prevalence of invasive *Streptococcus pneumoniae* serotypes in those 15–49 years old, 2016–2020
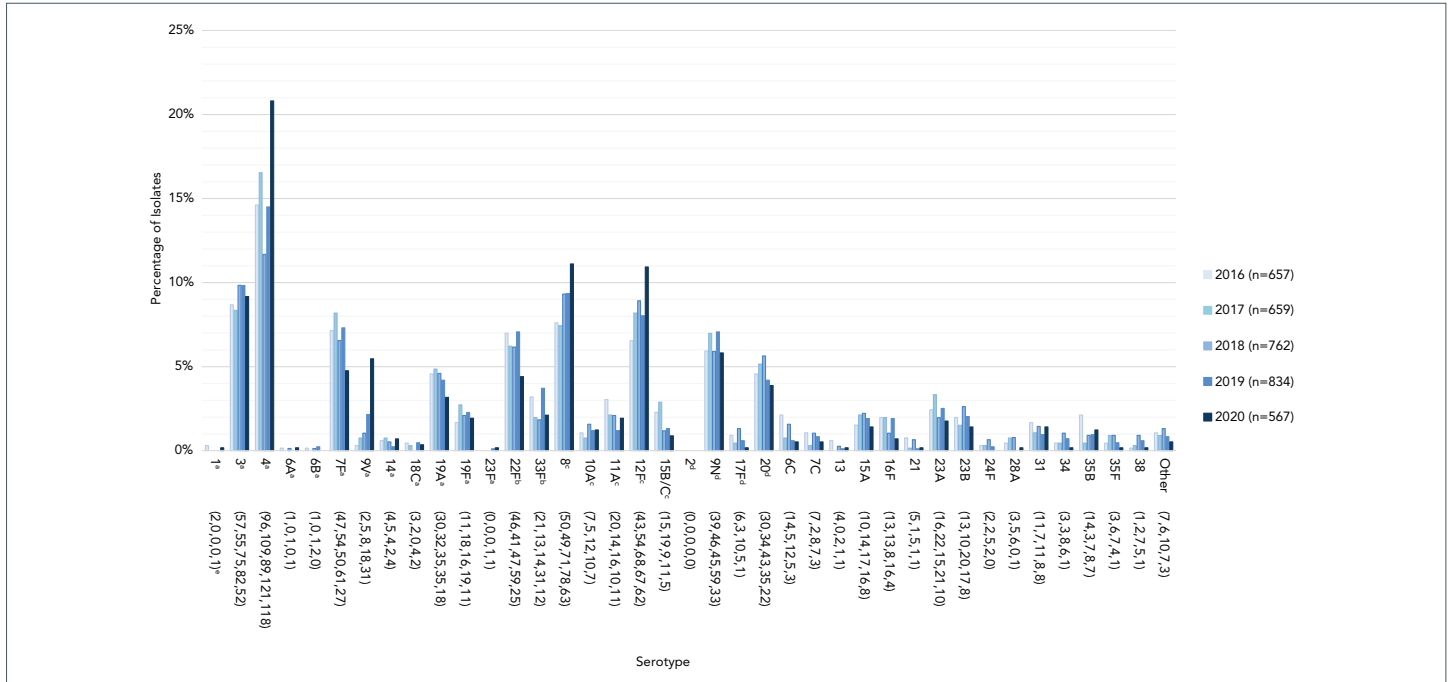
a Component of PCV13
b Component of PCV15
c Component of PCV20
d Component of PPV23
e Number of isolates for 2016, 2017, 2018, 2019 and 2020 respectively
Note: Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Figure S9: Prevalence of invasive *Streptococcus pneumoniae* serotypes in those 50–64 years old, 2016–2020
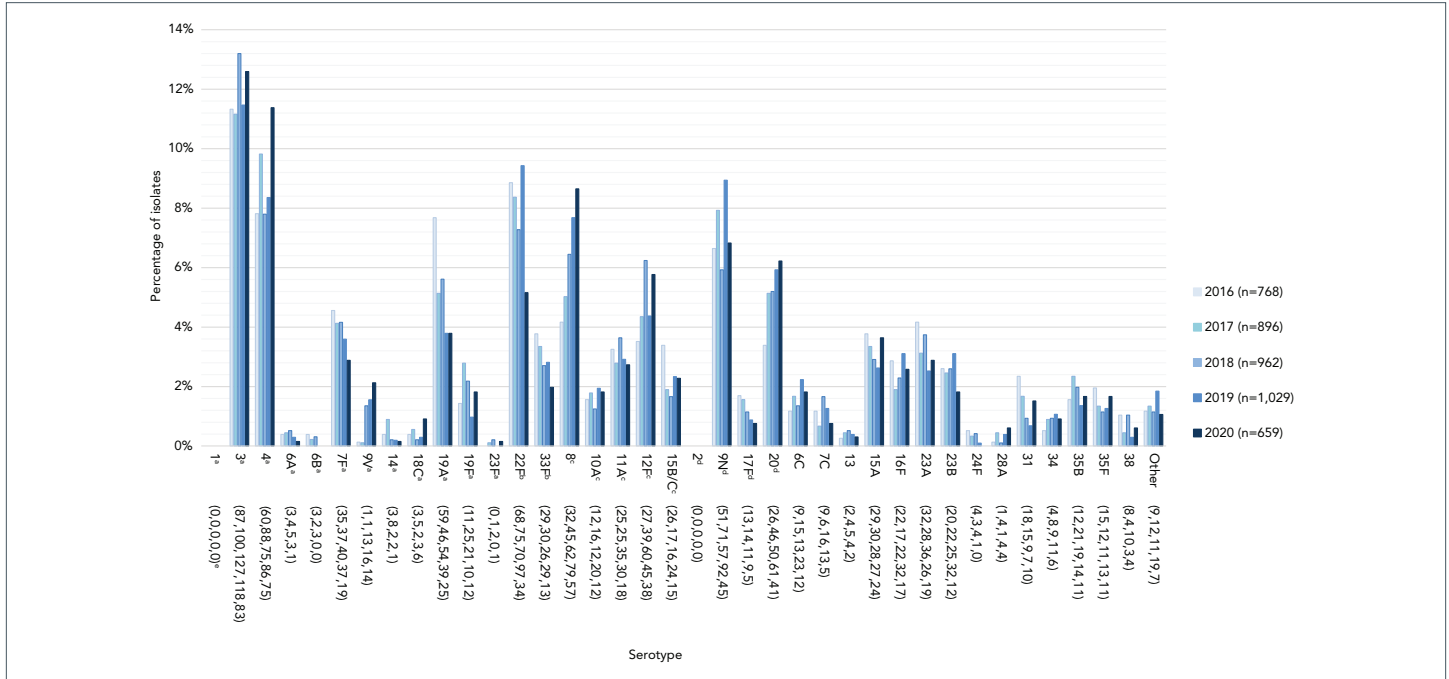
a Component of PCV13
b Component of PCV15
c Component of PCV20
d Component of PPV23
e Number of isolates for 2016, 2017, 2018, 2019 and 2020 respectively
Note: Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types
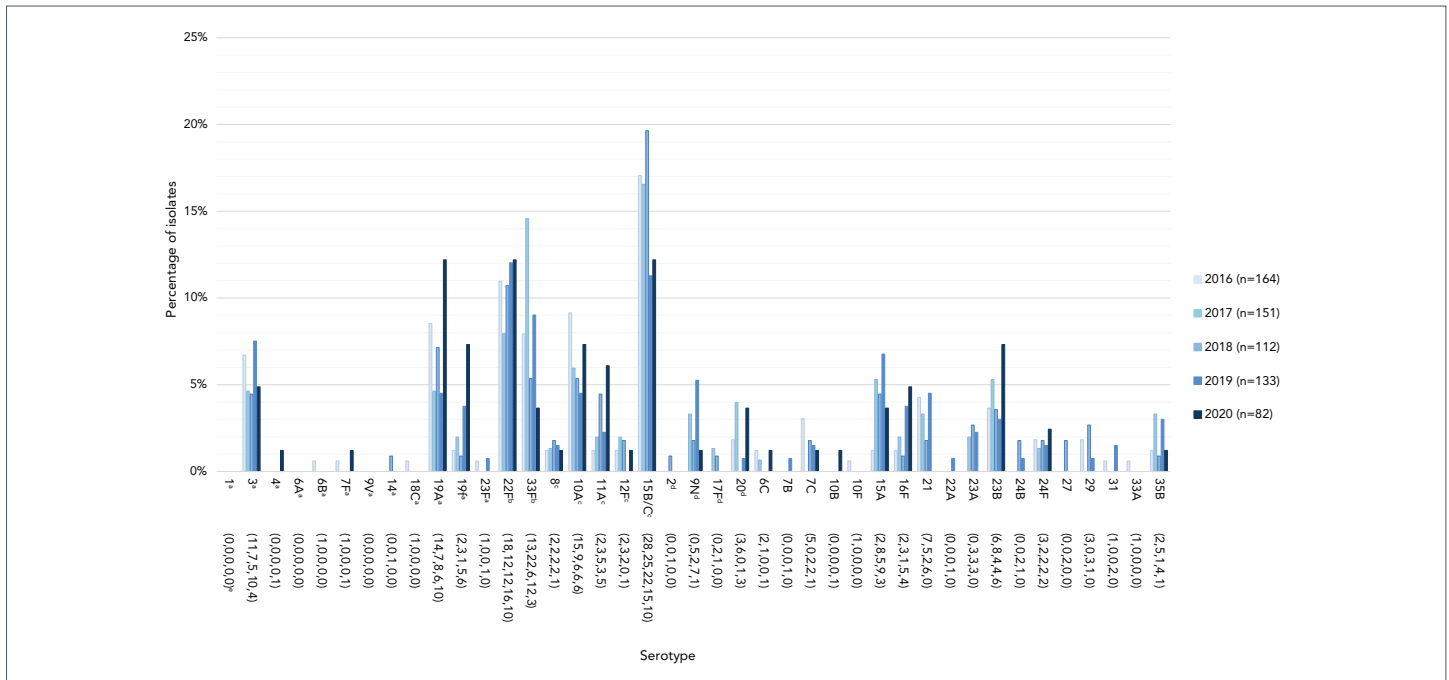
Figure S10: Prevalence of invasive *Streptococcus pneumoniae* serotypes isolated in 2020 for those younger than two, 2–4 and 5–14 years old
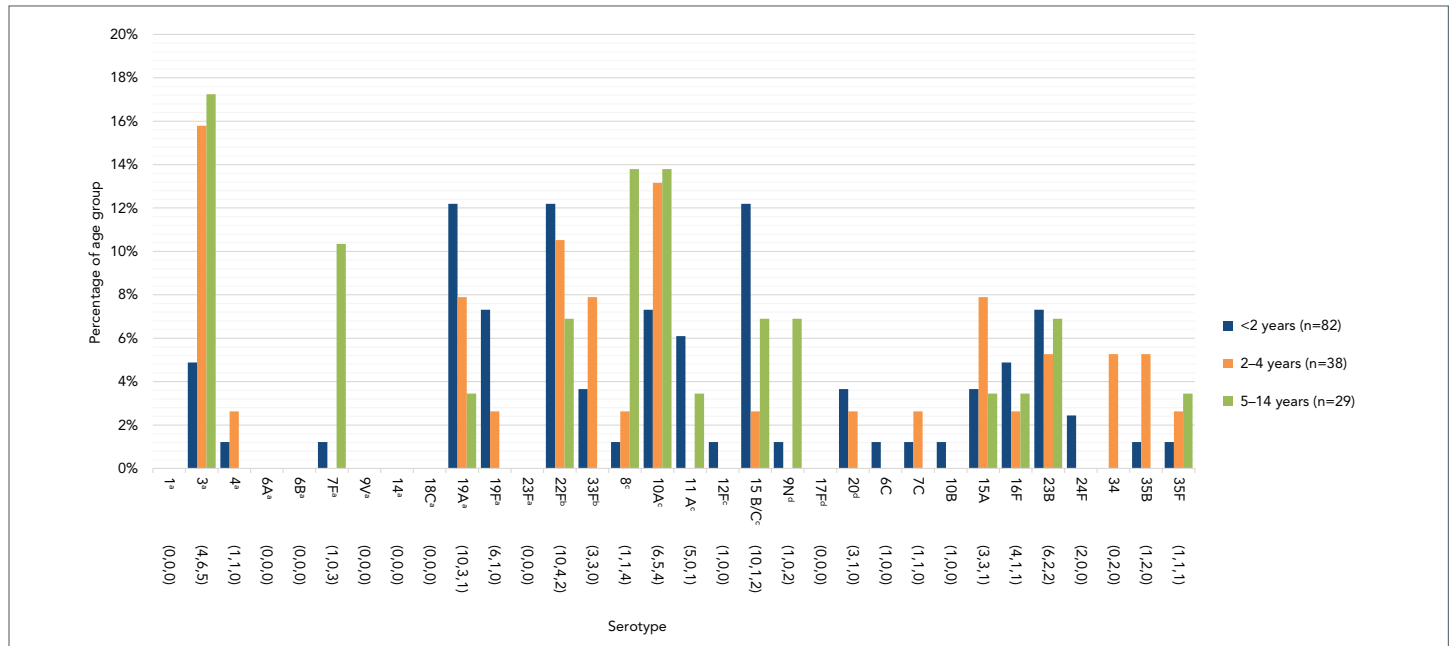
a Component of PCV13
b Component of PCV15
c Component of PCV20
d Component of PPV23
e Number of isolates from younger than two, 2–4, 5–14 years age groups, respectively
Note: Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types
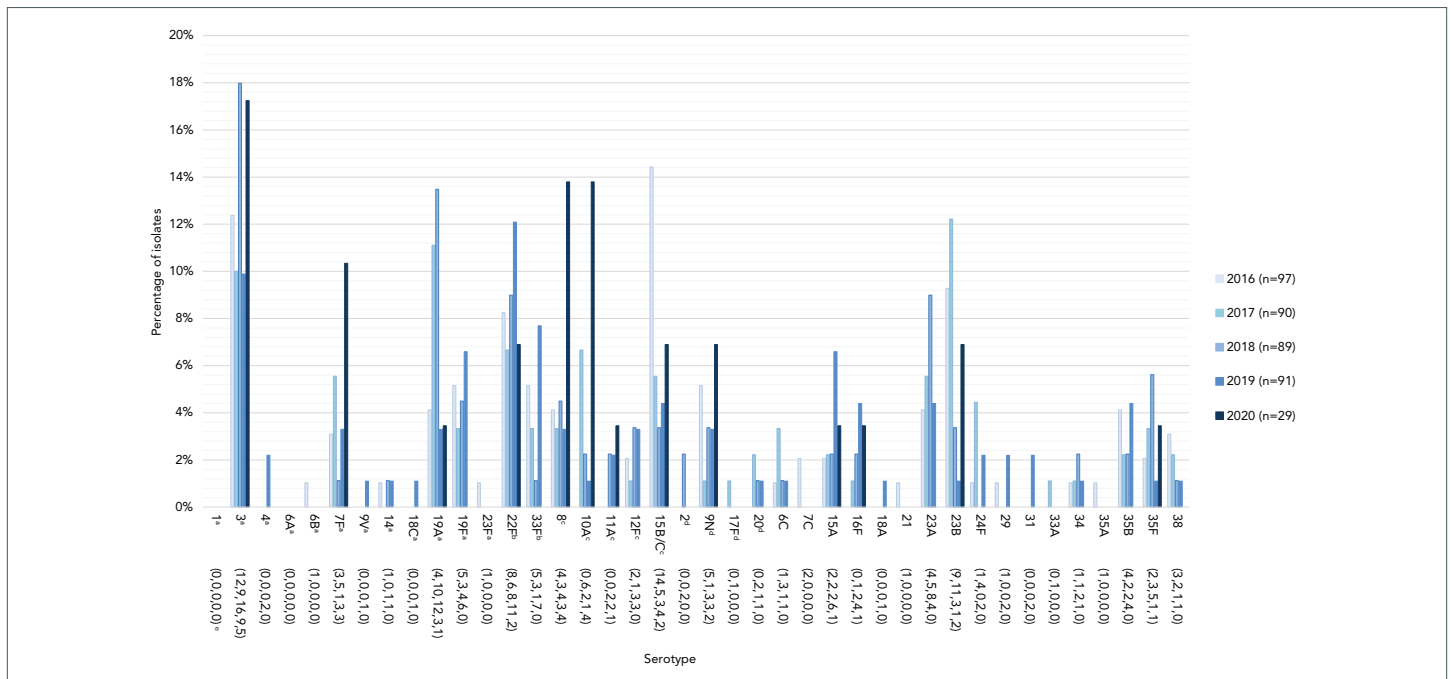
Figure S11: Prevalence of invasive *Streptococcus pneumoniae* serotypes isolated in 2020 for those 15–49 and 50–64 years and 65 years and older
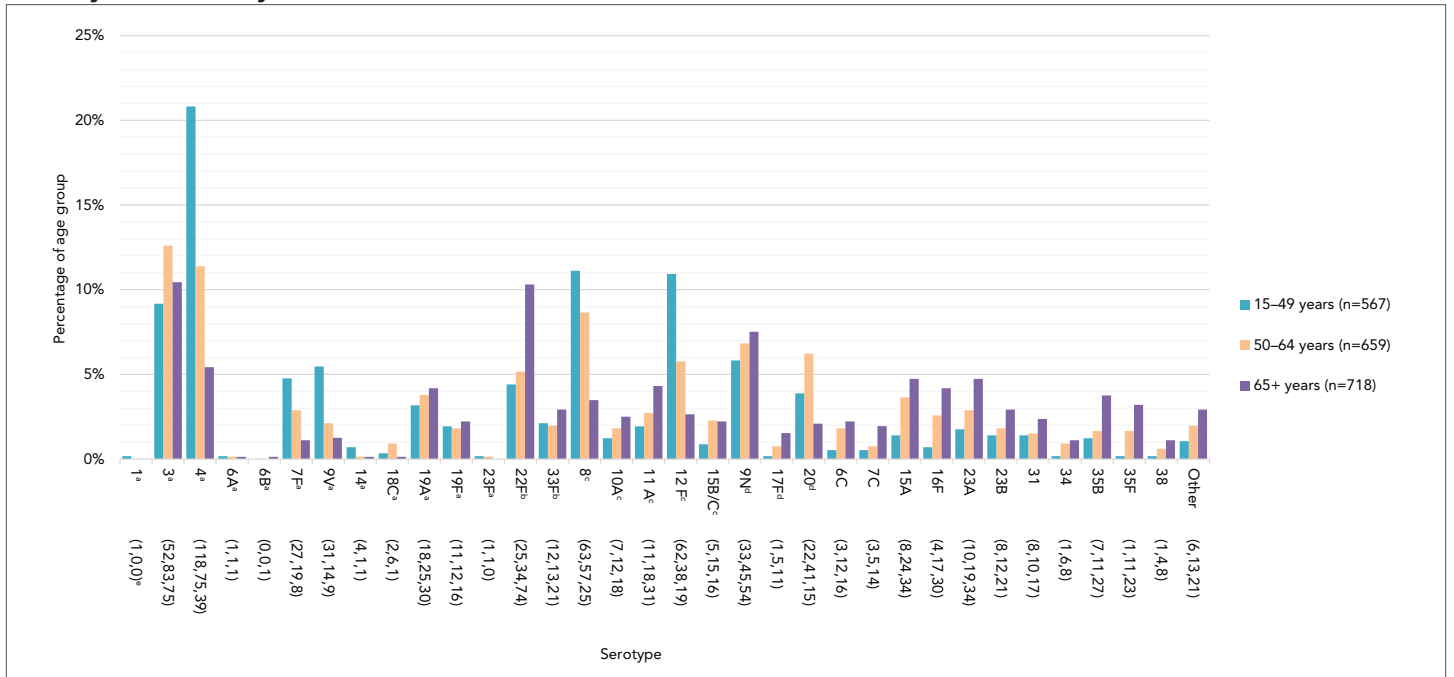
a Component of PCV13
b Component of PCV15
c Component of PCV20
d Component of PPV23
e Number of isolates from 15–49, 50–64, 65 years and older, respectively
Notes: Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types
Does not include 15 isolates for which age was not available

Figure S12: Number of invasive *Streptococcus pneumoniae* isolates collected in 2020, by region and serotype
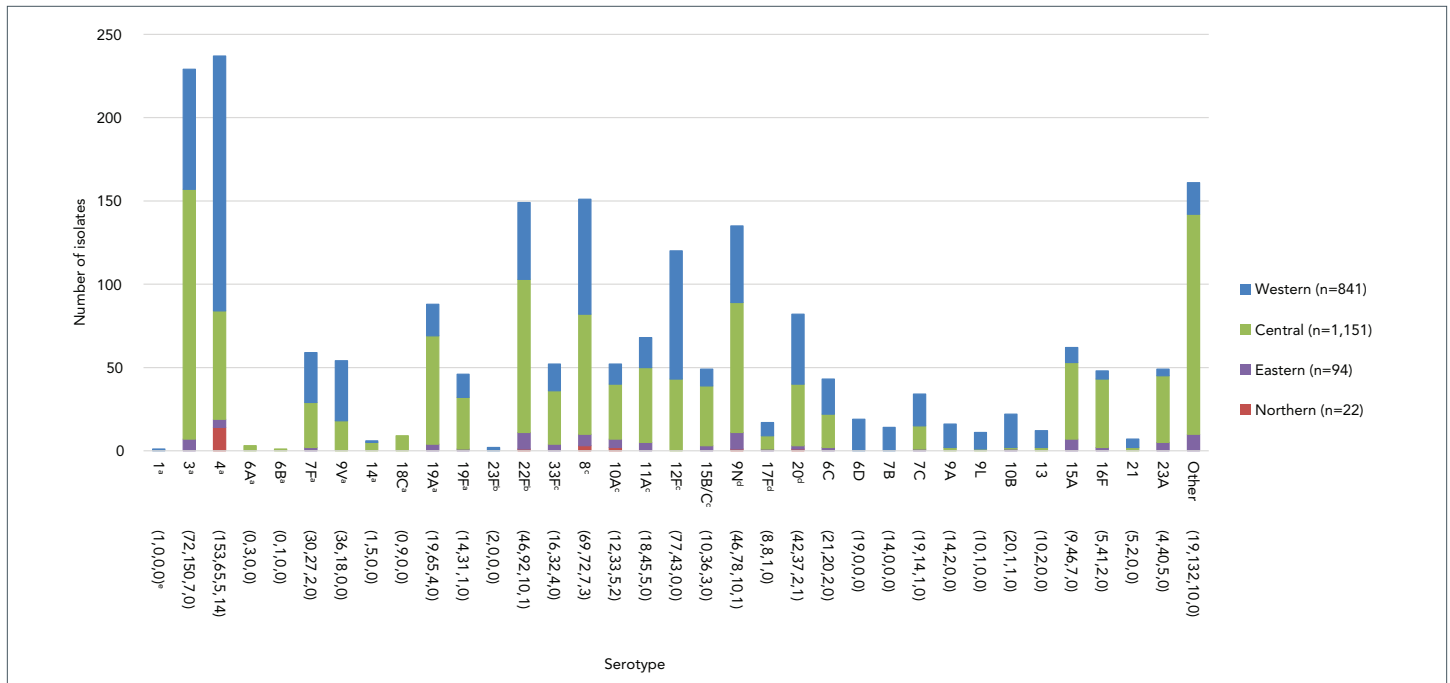
^a Component of PCV13
^b Component of PCV15
^c Component of PCV20
^d Component of PPV23
^e Number of isolates from Western, Central, Eastern and Northern Canada, respectively
Note: Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Figure S13: Prevalence of the ten most common invasive *Streptococcus pneumoniae* serotypes collected from Western Canada in 2020
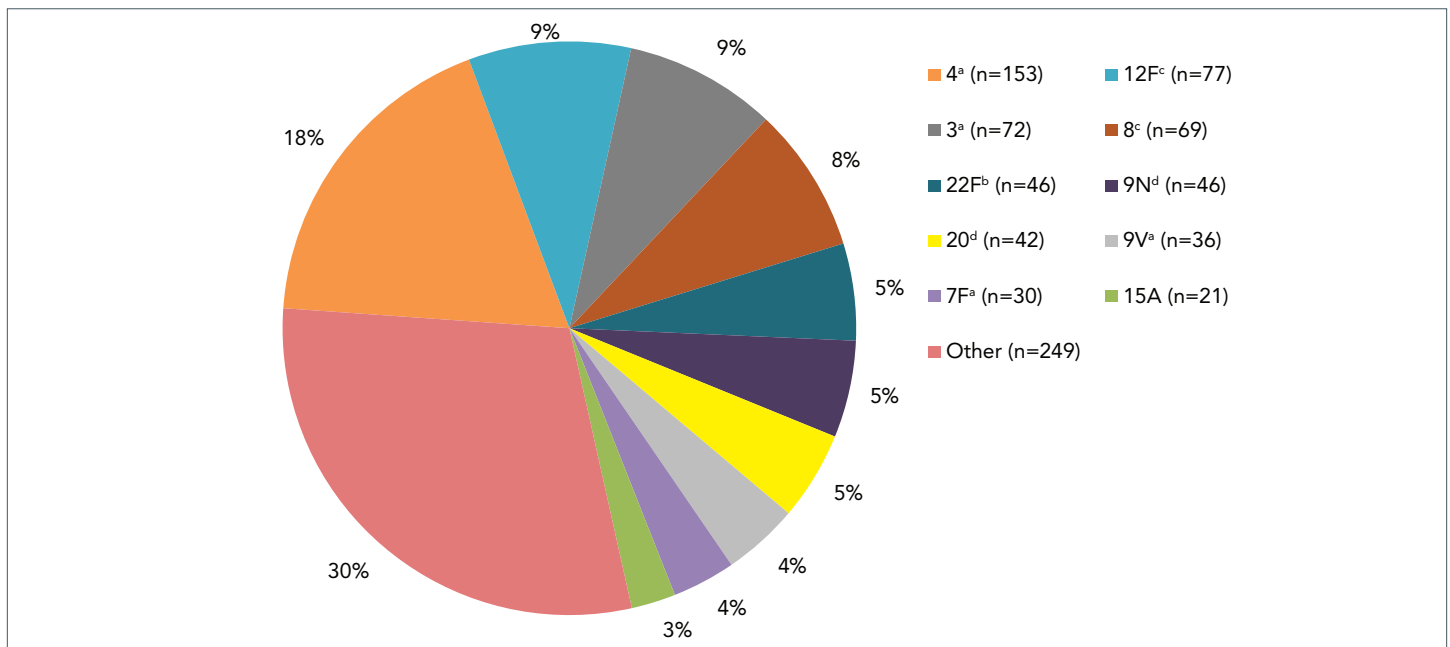
^a Component of PCV13
^b Component of PCV15
^c Component of PCV20
^d Component of PPV23
Note: Western Canada consists of British Columbia, Alberta, Saskatchewan and Manitoba

Figure S14: Prevalence of the ten most common invasive *Streptococcus pneumoniae* serotypes collected from Central Canada in 2020

Legend:
- 3[a] (n=150)
- 22F[b] (n=92)
- 9N[d] (n=78)
- 8[c] (n=72)
- 4[a] (n=65)
- 19A[a] (n=65)
- 15A (n=46)
- 11A[a] (n=45)
- 12F[c] (n=43)
- 16F (n=41)
- Other (n=454)
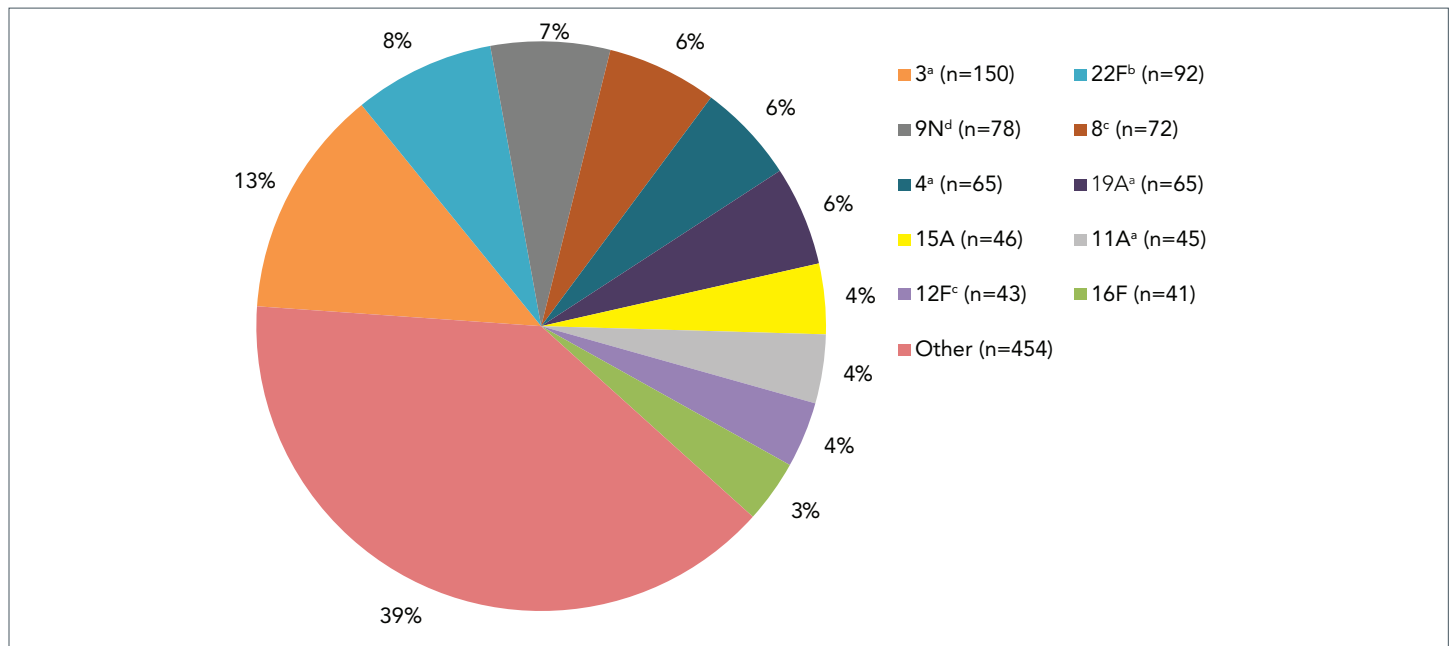
[a] Component of PCV13
[b] Component of PCV15
[c] Component of PCV20
[d] Component of PPV23
Note: Central Canada consists of Ontario and Québec

Figure S15: Prevalence of the ten most common invasive *Streptococcus pneumoniae* serotypes collected from Eastern Canada in 2020

Legend:
- 22F[b] (n=10)
- 9N[d] (n=10)
- 3[a] (n=7)
- 8[c] (n=7)
- 15A (n=7)
- 4[a] (n=5)
- 11A[c] (n=5)
- 23A (n=5)
- 10A[c] (n=5)
- 19A[a] (n=4)
- Other (n=29)
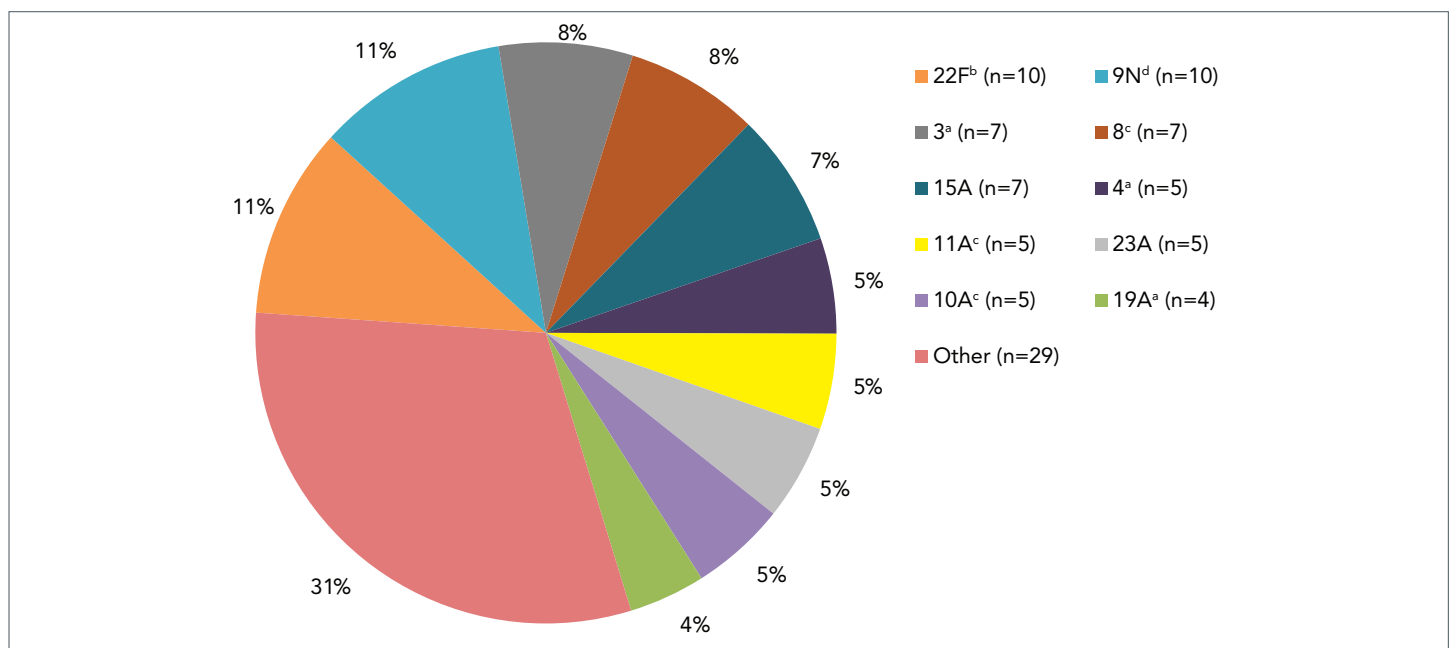
[a] Component of PCV13
[b] Component of PCV15
[c] Component of PCV20
[d] Component of PPV23
Note: Eastern Canada consists of New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland and Labrador

Figure S16: Prevalence of invasive *Streptococcus pneumoniae* serotypes collected from Northern Canada, 2020

Legend:
- 4[a] (n=14)
- 8[c] (n=3)
- 10A[c] (n=2)
- 22F[c] (n=1)
- 9N[d] (n=1)
- 20[d] (n=1)

Pie chart values: 64%, 14%, 9%, 4%, 4%, 5%
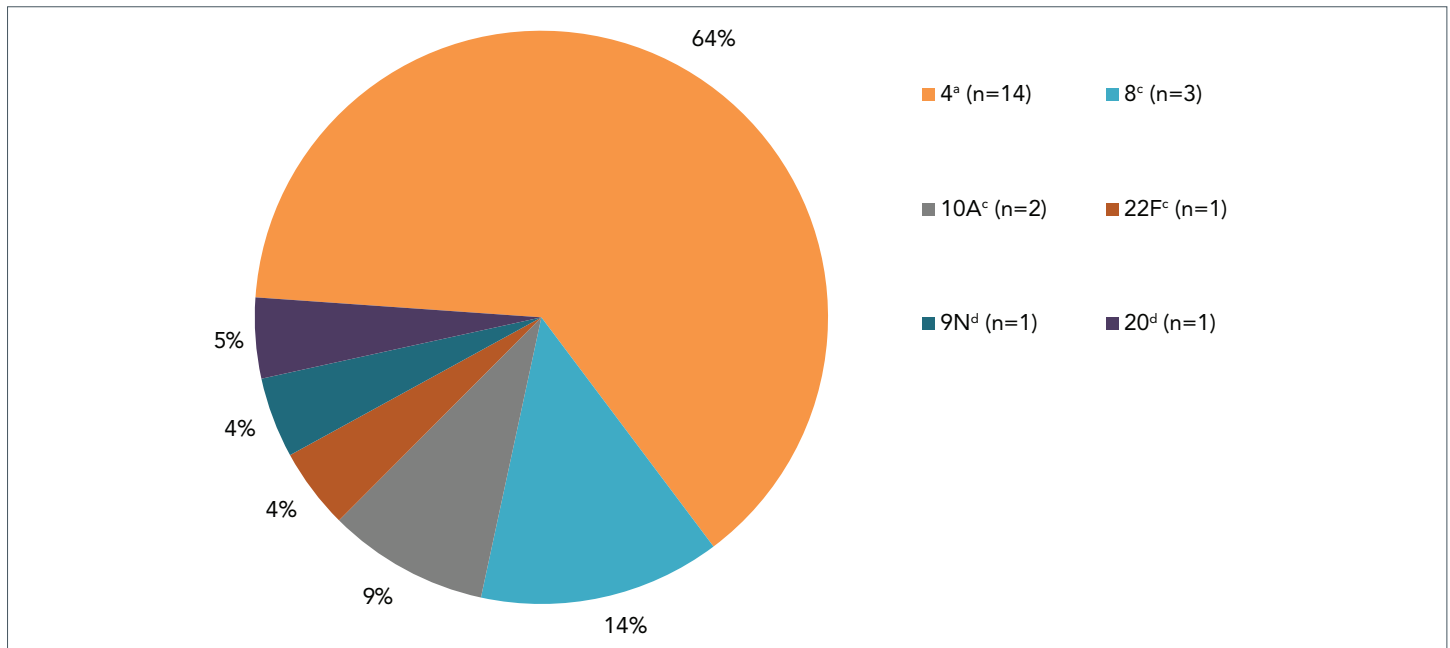
[a] Component of PCV13
[b] Component of PCV15
[c] Component of PCV20
[d] Component of PPV23
NoteNorthern Canada consists of Yukon Territories, Northwest Territories and Nunavut

Figure S17: Proportion of invasive pneumococcal disease isolates by vaccine[a] for those younger than two years old, 2016–2020
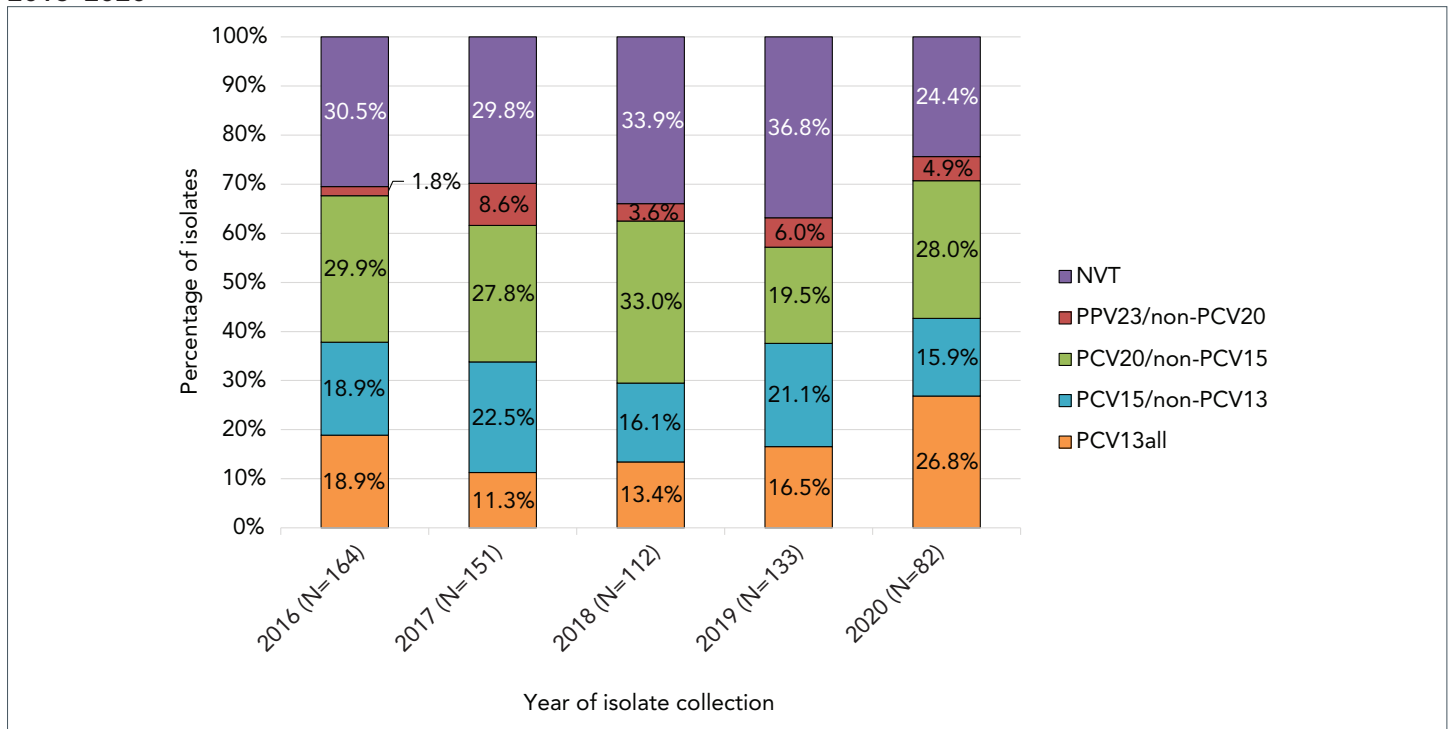
Abbreviation: NVT, non-vaccine serotype
[a] Vaccine serotypes include PCV13 (1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 19A, 19F, 18C, 23F); PCV15 (all PCV13 plus 22F and 33F); PCV20 (all PCV15 plus 8, 10A, 11A, 12F, 15B/C) and PPV23 (PCV20 serotypes except 6A, plus 2, 9N, 17F, 20); NVT=all serotypes not included in PCV13, PCV15, PCV20 and PPV23. Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Figure S18: Proportion of invasive pneumococcal disease isolates by vaccine[a] for those 2–4 years old, 2016–2020
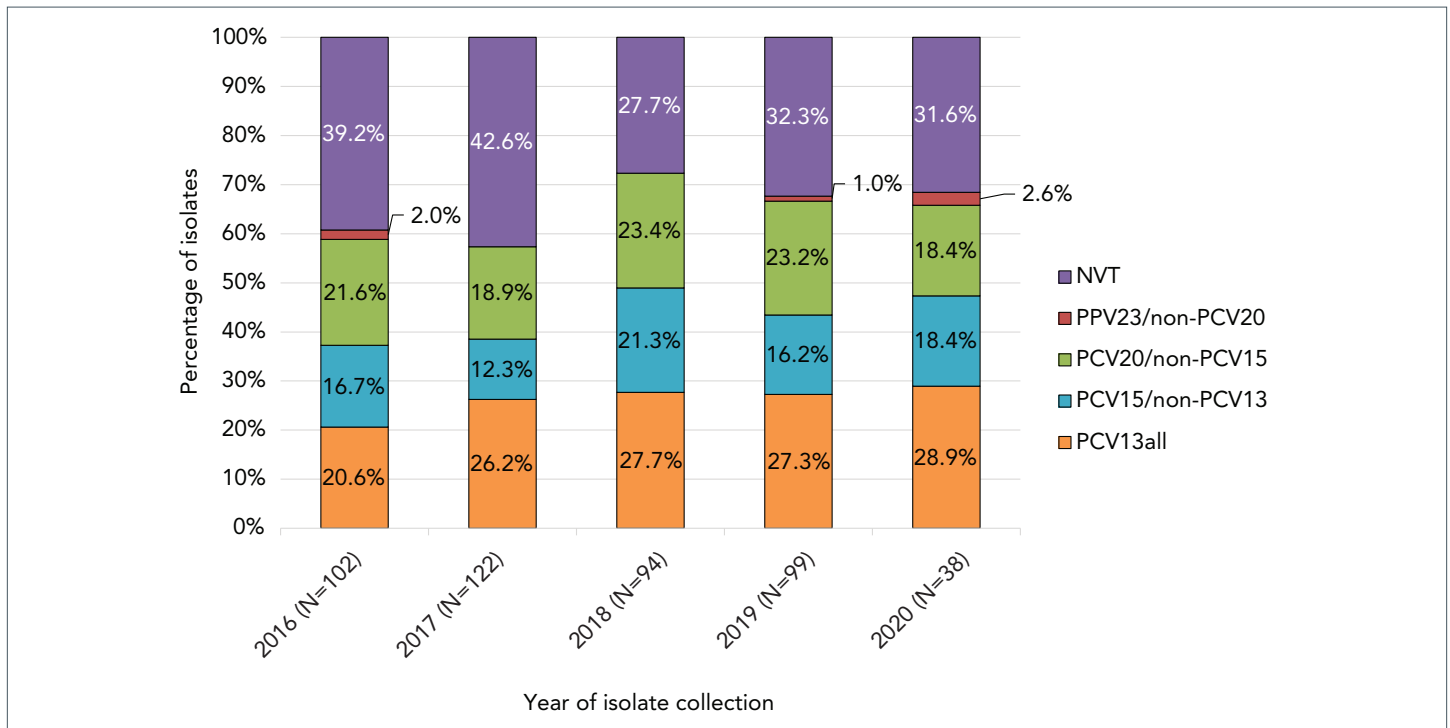
Figure S19: Proportion of invasive pneumococcal disease isolates by vaccine[a] for those 5–14 years old, 2016–2020
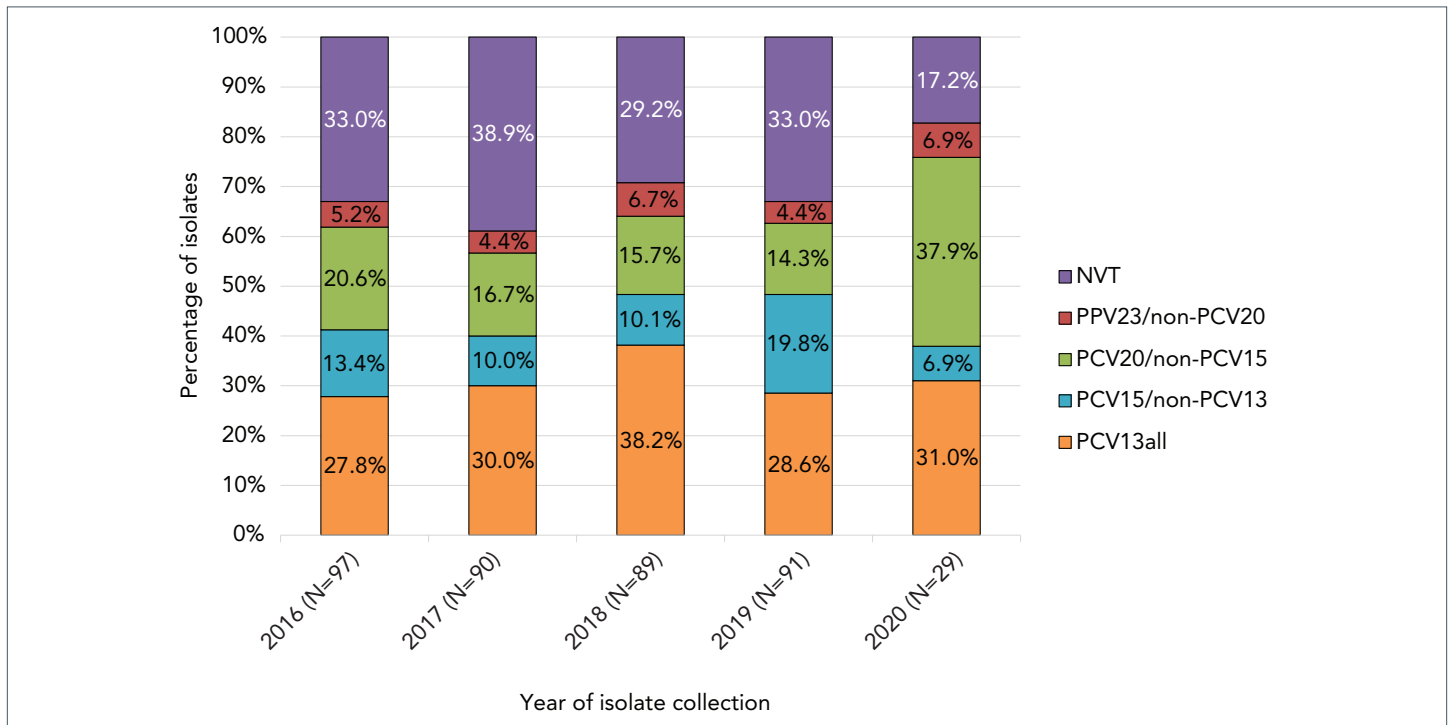
Figure S20: Proportion of invasive pneumococcal disease isolates by vaccine[a] for those 15–49 years old, 2016–2020
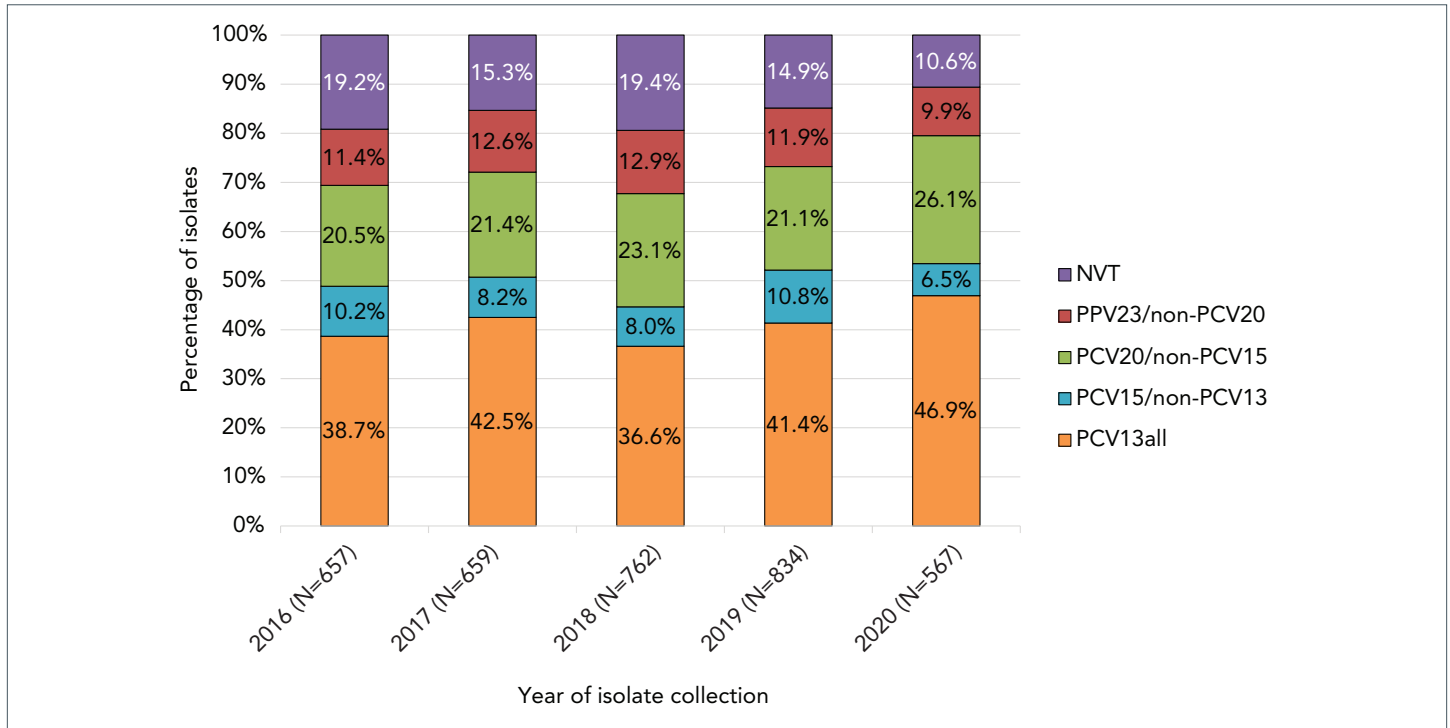
Abbreviation: NVT, non-vaccine serotype
[a] Vaccine serotypes include PCV13 (1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 19A, 19F, 18C, 23F); PCV15 (all PCV13 plus 22F and 33F); PCV20 (all PCV15 plus 8, 10A, 11A, 12F, 15B/C) and PPV23 (PCV20 serotypes except 6A, plus 2, 9N, 17F, 20); NVT=all serotypes not included in PCV13, PCV15, PCV20 and PPV23. Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Figure S21: Proportion of invasive pneumococcal disease isolates by vaccine[a] for those 50–64 years old, 2016–2020
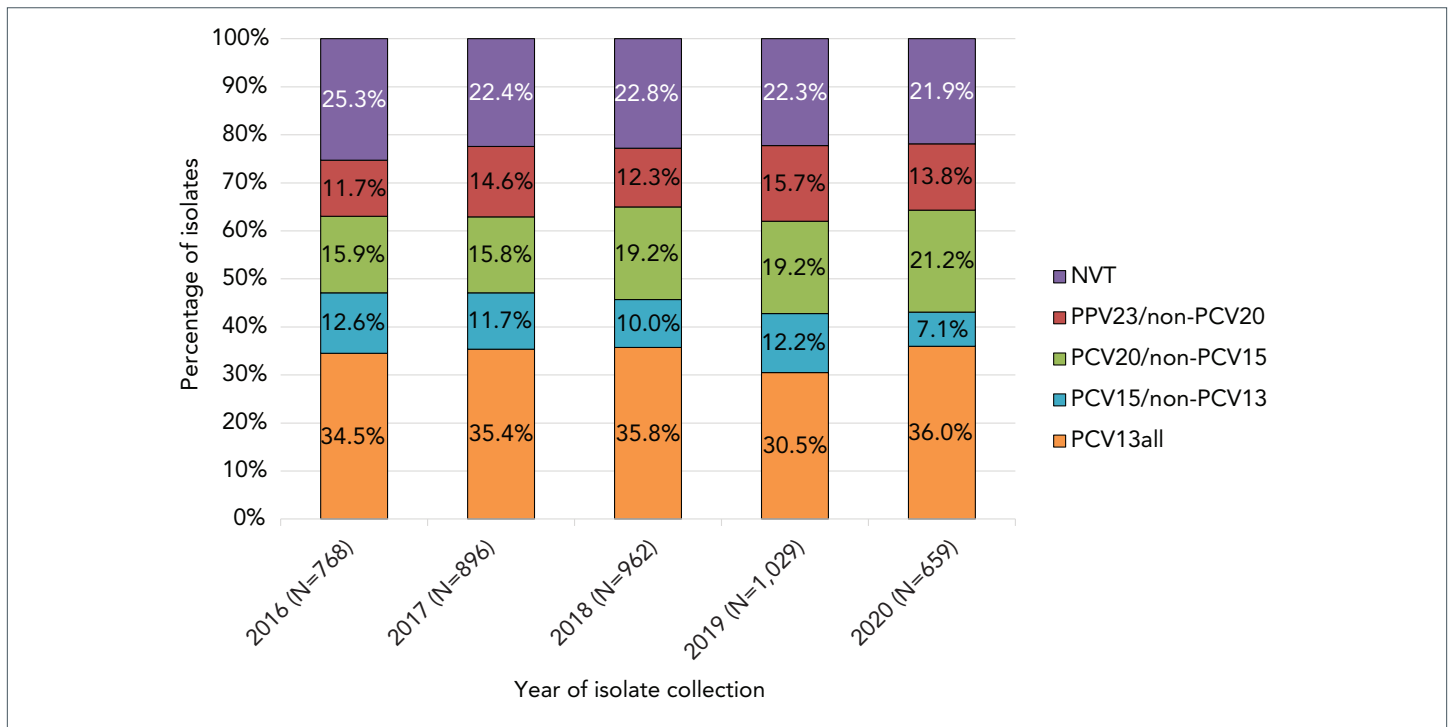
Abbreviation: NVT, non-vaccine serotype
[a] Vaccine serotypes include PCV13 (1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 19A, 19F, 18C, 23F); PCV15 (all PCV13 plus 22F and 33F); PCV20 (all PCV15 plus 8, 10A, 11A, 12F, 15B/C) and PPV23 (PCV20 serotypes except 6A, plus 2, 9N, 17F, 20); NVT=all serotypes not included in PCV13, PCV15, PCV20 and PPV23. Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Table S2: Proportion of vaccine serotypes[a] for those younger than two years old, 2016–2020

| Year	Vaccine										Total
	PCV13		PCV15/non-PCV13		PCV20/non-PCV15		PPV23/non-PCV20		NVT		
	%	N	%	N	%	N	%	N	%	N	
2016	18.9%	31	18.9%	31	29.9%	49	1.8%	3	30.5%	50	164
2017	11.3%	17	22.5%	34	27.8%	42	8.6%	13	29.8%	45	151
2018	13.4%	15	16.1%	18	33.0%	37	3.6%	4	33.9%	38	112
2019	16.5%	22	21.1%	28	19.5%	26	6.0%	8	36.8%	49	133
2020	26.8%	22	15.9%	13	28.0%	23	4.9%	4	24.4%	20	82

Abbreviation: NVT, non-vaccine serotype

[a] Vaccine serotypes include PCV13 (1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 19A, 19F, 18C, 23F); PCV15 (all PCV13 plus 22F and 33F); PCV20 (all PCV15 plus 8, 10A, 11A, 12F, 15B/C) and PPV23 (PCV20 serotypes except 6A, plus 2, 9N, 17F, 20); NVT=all serotypes not included in PCV13, PCV15, PCV20 and PPV23. Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Table S3: Proportion of vaccine serotypes[a] for those 2–4 years old, 2016–2020

| Year	Vaccine										Total
	PCV13		PCV15/non-PCV13		PCV20/non-PCV15		PPV23/non-PCV20		NVT		
	%	N	%	N	%	N	%	N	%	N	
2016	20.6%	21	16.7%	17	21.6%	22	2.0%	2	39.2%	40	102
2017	26.2%	32	12.3%	15	18.9%	23	0.0%	0	42.6%	52	122
2018	27.7%	26	21.3%	20	23.4%	22	0.0%	0	27.7%	26	94
2019	27.3%	27	16.2%	16	23.2%	23	1.0%	1	32.3%	32	99
2020	28.9%	11	18.4%	7	18.4%	7	2.6%	1	31.6%	12	38

Abbreviation: NVT, non-vaccine serotype

[a] Vaccine serotypes include PCV13 (1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 19A, 19F, 18C, 23F); PCV15 (all PCV13 plus 22F and 33F); PCV20 (all PCV15 plus 8, 10A, 11A, 12F, 15B/C) and PPV23 (PCV20 serotypes except 6A, plus 2, 9N, 17F, 20); NVT=all serotypes not included in PCV13, PCV15, PCV20 and PPV23. Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Table S4: Proportion of vaccine serotypes[a] for those 5–14 years old, 2016–2020

Year	Vaccine										Total
	PCV13		PCV15/non-PCV13		PCV20/non-PCV15		PPV23/non-PCV20		NVT		
	%	N	%	N	%	N	%	N	%	N	
2016	27.8%	27	13.4%	13	20.6%	20	5.2%	5	33.0%	32	97
2017	30.0%	27	10.0%	9	16.7%	15	4.4%	4	38.9%	35	90
2018	38.2%	34	10.1%	9	15.7%	14	6.7%	6	29.2%	26	89
2019	28.6%	26	19.8%	18	14.3%	13	4.4%	4	33.0%	30	91
2020	31.0%	9	6.9%	2	37.9%	11	6.9%	2	17.2%	5	29

Abbreviation: NVT, non-vaccine serotype

[a] Vaccine serotypes include PCV13 (1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 19A, 19F, 18C, 23F); PCV15 (all PCV13 plus 22F and 33F); PCV20 (all PCV15 plus 8, 10A, 11A, 12F, 15B/C) and PPV23 (PCV20 serotypes except 6A, plus 2, 9N, 17F, 20); NVT=all serotypes not included in PCV13, PCV15, PCV20 and PPV23. Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Table S5: Proportion of vaccine serotypes[a] for those 15–49 years old, 2016–2020

Year	Vaccine										Total
	PCV13		PCV15/non-PCV13		PCV20/non-PCV15		PPV23/non-PCV20		NVT		
	%	N	%	N	%	N	%	N	%	N	
2016	38.7%	254	10.2%	67	20.5%	135	11.4%	75	19.2%	126	657
2017	42.5%	280	8.2%	54	21.4%	141	12.6%	83	15.3%	101	659
2018	36.6%	279	8.0%	61	23.1%	176	12.9%	98	19.4%	148	762
2019	41.4%	345	10.8%	90	21.1%	176	11.9%	99	14.9%	124	834
2020	46.9%	266	6.5%	37	26.1%	148	9.9%	56	10.6%	60	567

Abbreviation: NVT, non-vaccine serotype

[a] Vaccine serotypes include PCV13 (1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 19A, 19F, 18C, 23F); PCV15 (all PCV13 plus 22F and 33F); PCV20 (all PCV15 plus 8, 10A, 11A, 12F, 15B/C) and PPV23 (PCV20 serotypes except 6A, plus 2, 9N, 17F, 20); NVT=all serotypes not included in PCV13, PCV15, PCV20 and PPV23. Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Table S6: Proportion of vaccine serotypes[a] for those 50–64 years old, 2016–2020

| Year | Vaccine | | | | | | | | | | Total |
| | PCV13 | | PCV15/non-PCV13 | | PCV20/non-PCV15 | | PPV23/non-PCV20 | | NVT | | |
	%	N	%	N	%	N	%	N	%	N	
2016	34.5%	265	12.6%	97	15.9%	122	11.7%	90	25.3%	194	768
2017	35.4%	317	11.7%	105	15.8%	142	14.6%	131	22.4%	201	896
2018	35.8%	344	10.0%	96	19.2%	185	12.3%	118	22.8%	219	962
2019	30.5%	314	12.2%	126	19.2%	198	15.7%	162	22.3%	229	1,029
2020	36.0%	237	7.1%	47	21.2%	140	13.8%	91	21.9%	144	659

Abbreviation: NVT, non-vaccine serotype
[a] Vaccine serotypes include PCV13 (1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 19A, 19F, 18C, 23F); PCV15 (all PCV13 plus 22F and 33F); PCV20 (all PCV15 plus 8, 10A, 11A, 12F, 15B/C) and PPV23 (PCV20 serotypes except 6A, plus 2, 9N, 17F, 20); NVT=all serotypes not included in PCV13, PCV15, PCV20 and PPV23. Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Table S7: Proportion of vaccine serotypes[a] for those 65 years and older, 2016–2020

| Year | Vaccine | | | | | | | | | | Total |
| | PCV13 | | PCV15/non-PCV13 | | PCV20/non-PCV15 | | PPV23/non-PCV20 | | NVT | | |
	%	N	%	N	%	N	%	N	%	N	
2016	25.0%	264	12.7%	134	16.8%	177	7.2%	76	38.2%	403	1,054
2017	23.3%	313	12.7%	171	15.9%	213	10.4%	139	37.7%	506	1,342
2018	26.4%	336	14.2%	181	15.1%	192	9.9%	126	34.5%	439	1,274
2019	26.6%	391	15.4%	226	13.5%	199	10.1%	149	34.4%	507	1,472
2020	25.2%	181	13.2%	95	15.2%	109	11.1%	80	35.2%	253	718

Abbreviation: NVT, non-vaccine serotype
[a] Vaccine serotypes include PCV13 (1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 19A, 19F, 18C, 23F); PCV15 (all PCV13 plus 22F and 33F); PCV20 (all PCV15 plus 8, 10A, 11A, 12F, 15B/C) and PPV23 (PCV20 serotypes except 6A, plus 2, 9N, 17F, 20); NVT=all serotypes not included in PCV13, PCV15, PCV20 and PPV23. Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Figure S22: Antimicrobial resistance trends of invasive *Streptococcus pneumoniae* isolates, 2016–2020
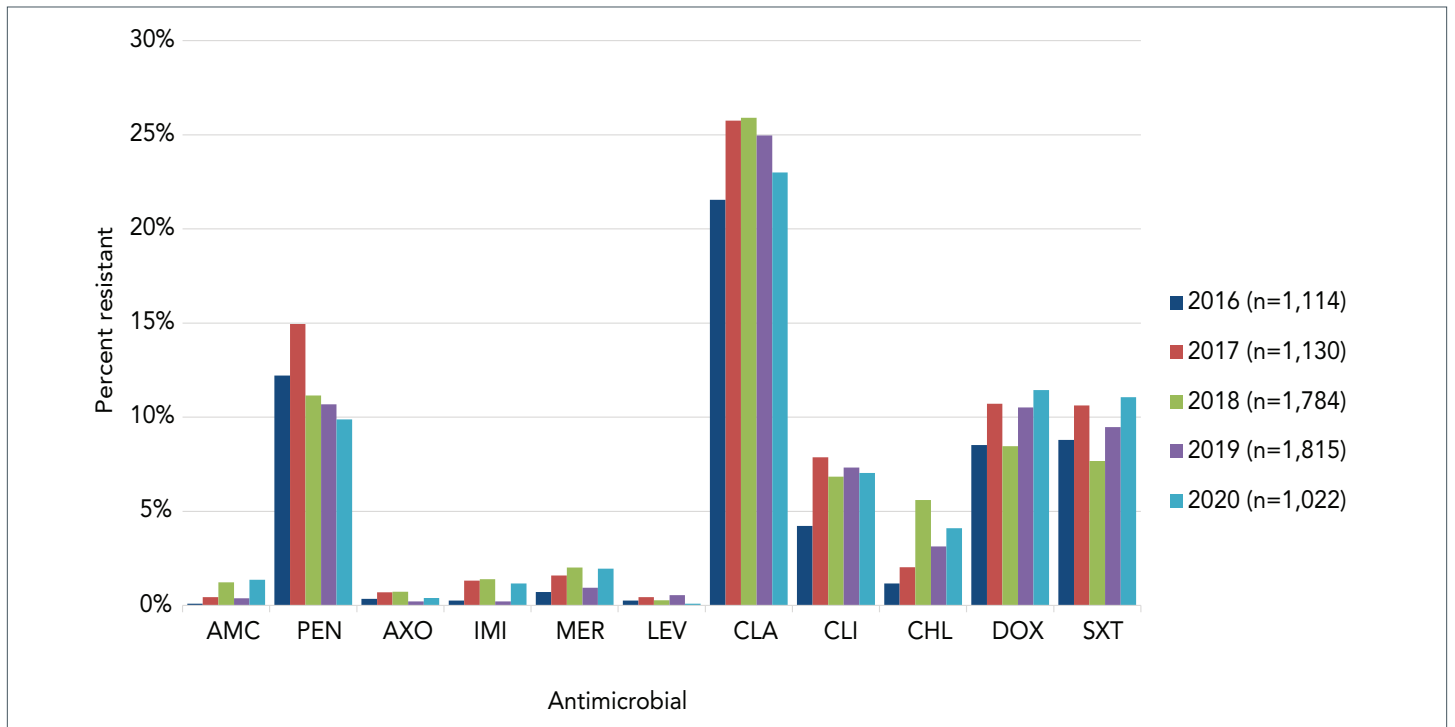
Abbreviations: AMC, amoxicillin/clavulanic acid; AXO, ceftriaxone using the parenteral meningitis interpretive standard; CHL, chloramphenicol; CLA, clarithromycin; CLI, clindamycin; DOX, doxycycline; IMI, imipenem; LEV, levofloxacin; MER, meropenem; PEN, penicillin using the parenteral meningitis CLSI interpretive standard; SXT, trimethoprim/sulfamethoxazole

Figure S23: Invasive *Streptococcus pneumoniae* serotypes by resistance to different antimicrobial classes[a], 2020
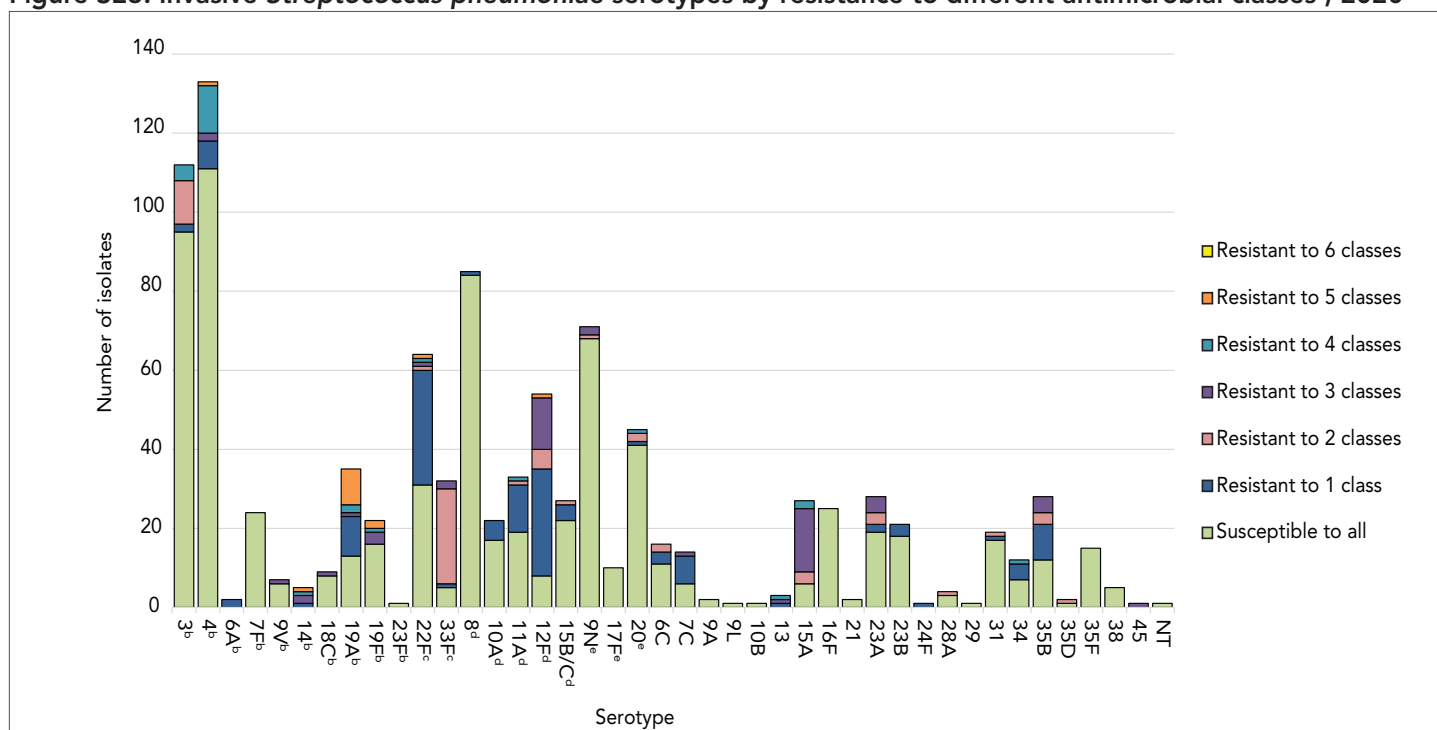
[a] Antimicrobial classes include: β-lactams (amoxicillin/clavulanic acid, penicillin using meningitis breakpoints, ceftriaxone using meningitis breakpoints, imipenem and meropenem); macrolides (clarithromycin); fluoroquinolones (levofloxacin); tetracyclines (doxycycline); folate pathway inhibitors (trimethoprim-sulfamethoxazole); phenicols (chloramphenicol); lincosamides (clindamycin); oxazolidinones (linezolid)
[b] Component of PCV13
[c] Component of PCV15
[d] Component of PCV20
[e] Component of PPV23
Note: Serotypes 15B and 15C were grouped together as 15B/C because of reported reversible switching between them *in vivo* during infection, making it difficult to precisely differentiate between the two types

Table S8: Multidrug resistance of invasive *Streptococcus pneumoniae* isolates, 2016–2020

Year	Number of antimicrobial classes[a] resistant													
	1		2		3		4		5		6		3 or more	
	%	N	%	N	%	N	%	N	%	N	%	N	%	N
2016	17.2%	193	7.1%	79	2.9%	33	0.9%	10	0.3%	3	0.1%	1	4.2%	47
2017	18.1%	204	7.6%	86	4.6%	52	1.8%	20	0.8%	9	0.4%	4	7.5%	85
2018	20.8%	371	6.2%	111	2.2%	40	2.3%	41	1.3%	23	0.6%	10	6.4%	114
2019	16.7%	303	7.1%	129	5.0%	90	2.0%	37	0.6%	11	0.0%	0	7.6%	138
2020	13.0%	133	5.9%	60	5.4%	55	2.6%	27	1.5%	15	0.0%	0	9.5%	97

[a] Antimicrobial classes include: β-lactams (amoxicillin/clavulanic acid, penicillin using meningitis breakpoints, ceftriaxone using meningitis breakpoints, imipenem and meropenem); macrolides (clarithromycin); fluoroquinolones (levofloxacin); tetracyclines (doxycycline); folate pathway inhibitors (trimethoprim-sulfamethoxazole); phenicols (chloramphenicol); lincosamides (clindamycin); oxazolidinones (linezolid)

Table S9: Multidrug resistance profiles of invasive *Streptococcus pneumoniae* serotypes in 2020

Serotype	Multidrug resistance pattern[a]													
	BLA-MAC-CLI-TET	BLA-MAC-CLI-TET-SXT	BLA-MAC-SXT	BLA-MAC-TET-SXT	MAC-CLI-TET	MAC-CLI-TET-CHL	MAC-CLI-TET-SXT	MAC-TET-CHL	MAC-TET-SXT	TET-SXT-CHL	MAC-CLI-TET-SXT-CHL	MAC-CLI-SXT	BLA-MAC-CLI-SXT	BLA-MAC-TET
3[b]	-	-	-	-	-	4	-	-	-	-	-	-	-	-
4[b]	-	-	-	-	1	12	-	1	-	-	1	-	-	-
9V[b]	-	-	-	-	-	-	-	-	1	-	-	-	-	-
14[b]	-	-	-	-	-	-	-	-	-	-	-	1	2	1
18C[b]	-	-	-	-	-	-	-	-	1	-	-	-	-	-
19A[b]	-	9	-	1	1	-	1	-	-	-	-	-	-	-
19F[b]	-	2	-	1	3	-	-	-	-	-	-	-	-	-
22F[c]	-	1	-	-	-	-	1	-	-	1	-	-	-	-
33F[c]	-	-	-	-	2	-	-	-	-	-	-	-	-	-
11A[d]	-	-	-	-	-	-	1	-	-	-	-	-	-	-
12F[d]	-	-	-	-	-	-	-	-	-	13	-	1	-	-
9N[e]	-	-	-	-	1	-	-	-	1	-	-	-	-	-
20[e]	-	-	-	-	-	-	1	-	-	-	-	-	-	-
7C	-	-	-	-	-	-	-	-	-	1	-	-	-	-
13	-	-	-	-	-	-	1	-	1	-	-	-	-	-
15A	1	-	-	-	16	-	1	-	-	-	-	-	-	-
23A	-	-	-	-	4	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	1	-	-	-	-	-	-	-
35B	-	-	3	-	-	-	-	-	-	-	-	-	-	1
45	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Total	1	12	3	2	28	16	7	1	5	15	1	2	2	2

[a] Antimicrobial classes: BLA=β-lactams (amoxicillin/clavulanic acid, penicillin and ceftriaxone [meningitis breakpoints]), imipenem and meropenem); MAC=macrolides (clarithromycin); FQN=fluoroquinolones (levofloxacin); TET=tetracyclines (doxycycline); SXT=folate pathway inhibitors (trimethoprim/sulfamethoxazole); CLI=lincosamides (clindamycin); CHL=phenicols (chloramphenicol). Dashes indicate no isolates were collected with this pattern
[b] Component of PCV13
[c] Component of PCV15
[d] Component of PCV20
[e] Component of PPV23

Table S10: Number of invasive *Streptococcus pneumoniae* isolates serotyped by the National Microbiology Laboratory (NML) in comparison to the total number of cases reported to Canadian Notifiable Diseases Surveillance System (CNDSS), 2020

Age group	Total number of isolates serotyped at NML	Total number of illnesses reported to CNDSS[a]
Younger than five years	117	115
5–39 years	327	370
40–59 years	666	709
60 years and older	942	998
All ages[b]	2,067	2,193

[a] Data from CNDSS, Public Health Agency of Canada
[b] All ages total includes isolates with no patient age. Total does not include isolates from pleural fluid