

## Influenza vaccination coverage for staff of residential care facilities British Columbia, 2012/13

### Background

Immunization coverage assessment is an important part of a quality immunization program. Immunization coverage assessment serves three main functions:

- i) Identifying populations with low levels of immunization coverage
- ii) Evaluating the delivery of immunization programs
- iii) Informing program planning

The 2007 Immunize BC Strategic Framework for Immunization target for influenza vaccination for health care workers in residential care facilities is 80% coverage. Influenza vaccination coverage for staff of residential care facilities in BC has ranged from 49% to 68% from the 2003/04 to 2011/12 influenza seasons.

A new provincial influenza prevention policy for healthcare workers was announced in BC in August 2012. The policy requires health care workers in all health authorities to be vaccinated against influenza or wear a surgical mask while in patient care areas during the influenza season (1 December to 30 April inclusive). The policy covers all health authority staff who work in patient care areas: unionized and excluded staff, volunteers, paramedics, students, contractors, and physicians. The policy was widely communicated, it received extensive provincial and national media attention and its implementation was accompanied by novel strategies such as the use of peer immunizers. Staff reporting of their influenza immunization was enabled through a variety of means including email, telephone, and directly from clinics offering on-site immunization. The policy originally included disciplinary measures for staff who did not comply, including loss of privileges and termination of employment, but all disciplinary measures were removed from the policy on 30 November 2012.

### Objective

- i) To quantify the proportion of staff in residential care facilities in British Columbia who were vaccinated against influenza during the 2012/13 influenza season.

### Methods

Residential care facilities were defined as facilities with 50% or more residents aged 65 years and older that are either:

- licensed under the Hospital Act; or
- licensed under the Community Care and Assisted Living Act and provide some health care services.

A list of the residential care facilities included in the 2011/12 influenza season's vaccination coverage statistics was sent to each health authority. Residential care facilities that closed during the previous year were removed and new facilities were added to the list.

There were two sources of influenza vaccination coverage data: an anonymised individual healthcare worker level dataset from the electronic Workplace Health Indicator Tracking and Evaluation (WHITE) database, and data entered by health authority staff into a BC Centre for Disease Control (BCCDC) web application. WHITE data were used preferentially over the BCCDC web application data.

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This was the first influenza coverage report for which individual level WHITE data were available. To be included in the WHITE data a staff member must have been employed by a health authority and have worked at least once between 1 December 2012 and 30 April 2013. Health authority staff who worked in more than one facility were included in the statistics of the acute care facility where they worked most often. Staff who were not on a health authority's payroll (contracted staff, trainees, etc.) were not included in the WHITE database. Physicians and medical residents were not included in the WHITE database for most facilities. The BCCDC web application data were aggregate data at the facility level, which were collected by health authority staff directly from facilities or using administrative databases (including health authority's WHITE databases).

Staff were defined as all persons who work or train on a full time, part time or casual basis in a facility or hospital who have direct or indirect contact with patients or residents, regardless of whether they are health care providers. This includes administrative and non-patient care staff (e.g. medical records, housekeeping and dietary) and excludes volunteers. This definition of staff is very inclusive and was outlined in the Ministry's Performance Agreements.

Changes in coverage rates over time should be interpreted with caution as the data collection methods have changed over time. Prior to the 2011/12 influenza coverage report, the number of staff reported for most facilities included staff who did not work during the influenza season (e.g. on long-term disability or leave), which would have underestimated the immunization coverage. Also, staff who worked in more than one facility were usually counted in the denominator of all the facilities in which they worked but only counted in the numerator (as immunized) in the facility where they received their immunization, which would have underestimated the immunization coverage.

The results were re-calculated excluding privately funded facilities. Health authorities may have more influence over the immunization practices of owned and operated, and contracted facilities.

The results were also re-calculated using the BCCDC web application data as the primary data source to give an indication of how using the individual level WHITE data affected the coverage estimates.

### Results

#### Reporting of facilities (table 1)

- 332/357 (93%) residential care facilities in British Columbia are included in this report
- 142/332 (43%) facilities included contracted staff in their statistics
- For 79/332 (24%) facilities, data from the WHITE database were used; for 253/332 (76%) facilities, data entered by health authority staff into the BCCDC web application were used

## Influenza vaccination coverage for staff of residential care facilities British Columbia, 2012/13

2012/13 influenza vaccination coverage (tables 2 and 3; figures 1 to 5)

- 75% (27,617/36,620) of staff of residential care facilities in BC were vaccinated against influenza, an increase from 57% coverage in 2011/12
- 69% to 83% was the range across the six health authorities
- 57% to 87% was the range across the sixteen health service delivery areas
- 14% to 100% was the range across all residential care facilities in BC
- 157/332 (47%) facilities met the 80% immunization coverage target, an increase from 65/334 (19%) facilities in 2011/12

Results excluding privately funded facilities (Appendix tables 6A and 7A)

- 92% (276/299) publicly funded or contracted residential facilities were included
- 77% (24,597/32,056) of staff were vaccinated against influenza

Results using BCCDC web application data as the primary data source (Appendix tables 8A and 9A)

- 72% (27,365/37,797) of staff were vaccinated against influenza
- 61% to 80% was the range across the six health authorities
- 50% to 82% was the range across the sixteen health service delivery areas

### Summary

Influenza immunization data were available for the majority of residential care facilities in all health authorities. The overall influenza vaccination coverage for staff of residential care facilities in BC was 75%, which is below the target of at least 80% coverage; just under half of the residential care facilities met the 80% coverage target. The coverage was similar when privately funded facilities were excluded from the analysis.

Within each health authority, there was a wide range of influenza vaccination coverage for residential care facilities. The reasons behind the variation in vaccination coverage between facilities are not known.

This is the first year that an individual level anonymised WHITE dataset has been used to calculate influenza immunization coverage statistics for residential care facilities in BC. However, only about a quarter of residential care facilities were included in WHITE because only facilities that are owned and operated by a health authority are included in WHITE. All previous seasons used data entered into the BCCDC web application. Using the BCCDC web application as the primary data source for the 2012/13 influenza season resulted in a coverage estimate of 72%, slightly lower than the estimate obtained using WHITE as the primary data source.

The increased influenza immunization coverage observed for the 2012/13 season compared to previous years was likely due to the Influenza Prevention Policy that was implemented in BC prior to the 2012/13 influenza season. While the 75% coverage achieved for the 2012/13 season is 18% higher (absolute) than the 57% coverage in 2011/12, less than half of the residential care facilities in BC met the 80% coverage target for their staff and substantial room for improvement remains.

## Influenza vaccination coverage for staff of residential care facilities British Columbia, 2012/13

### Tables and Figures

Table 1: Residential care facilities included by health authority and for BC, 2012/13

Health region	Residential care facilities		
	Reported	Total	% reported
Interior	77	87	89
Fraser	92	104	88
Vancouver Coastal	59	62	95
Vancouver Island	79	79	100
Northern	25	25	100
British Columbia	332	357	93

Table 2: Data source used to calculate influenza vaccination coverage, 2012/13  
(WHITE data as the 1<sup>st</sup> choice; BCCDC web application as the second choice)

Health region	Residential care facilities		
	WHITE*	BCCDC*	Total
Interior	32	45	77
Fraser	4	88	92
Vancouver Coastal	18	41	59
Vancouver Island	13	66	79
Northern	12	13	25
British Columbia	79	253	332

\* WHITE: facility influenza immunization coverage statistics were calculated from the Workplace Health Indicator Tracking and Evaluation database.

BCCDC: facility influenza immunization coverage statistics were entered by health authority staff into an online database or emailed directly to the BCCDC in a spreadsheet.

### Influenza vaccination coverage for staff of residential care facilities British Columbia, 2012/13

Table 3: Influenza vaccination coverage for staff of residential care facilities by health authority, health service delivery area and for BC, 2012/13 (WHITE data as the 1<sup>st</sup> choice; BCCDC web application as the second choice)

Health region	Residential care facility staff		
	Immunized	Total	(%)
<b>Interior</b>	<b>5386</b>	<b>7815</b>	<b>(69)</b>
East Kootenay	655	946	(69)
Kootenay Boundary	538	881	(61)
Okanagan	3181	4640	(69)
Thompson/Cariboo/Shuswap	1012	1348	(75)
<b>Fraser</b>	<b>8756</b>	<b>10955</b>	<b>(80)</b>
Fraser East	1409	1839	(77)
Fraser North	3362	4213	(80)
Fraser South	3985	4903	(81)
<b>Vancouver Coastal</b>	<b>6350</b>	<b>7652</b>	<b>(83)</b>
Richmond	701	803	(87)
Vancouver	4196	5020	(84)
N Shore/Coast Garibaldi	1453	1829	(79)
<b>Vancouver Island</b>	<b>5852</b>	<b>8370</b>	<b>(70)</b>
South Vancouver Island	3263	4563	(72)
Central Vancouver Island	1894	2828	(67)
North Vancouver Island	695	979	(71)
<b>Northern</b>	<b>1273</b>	<b>1828</b>	<b>(70)</b>
Northwest	394	495	(80)
Northern Interior	616	866	(71)
Northeast	263	467	(56)
<b>BC</b>	<b>27617</b>	<b>36620</b>	<b>(75)</b>

Table 4: Residential care facility staff influenza vaccination coverage by health authority and for BC, 2003/04 to 2012/13 influenza seasons

Health region	Influenza immunization coverage (%) for staff of residential care facilities by influenza season									
	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Interior	54	52	64	56	60	56	42	48	49	69
Fraser	76	63	69	72	73	67	53	58	63	80
Vancouver Coastal	74	72	75	75	76	74	61	69	67	83
Vancouver Island	64	60	65	63	58	58	43	47	51	70
Northern	53	50	56	57	58	49	32	49	47	70
British Columbia	64	63	68	67	67	64	49	56	57	75

## Influenza vaccination coverage for staff of residential care facilities British Columbia, 2012/13

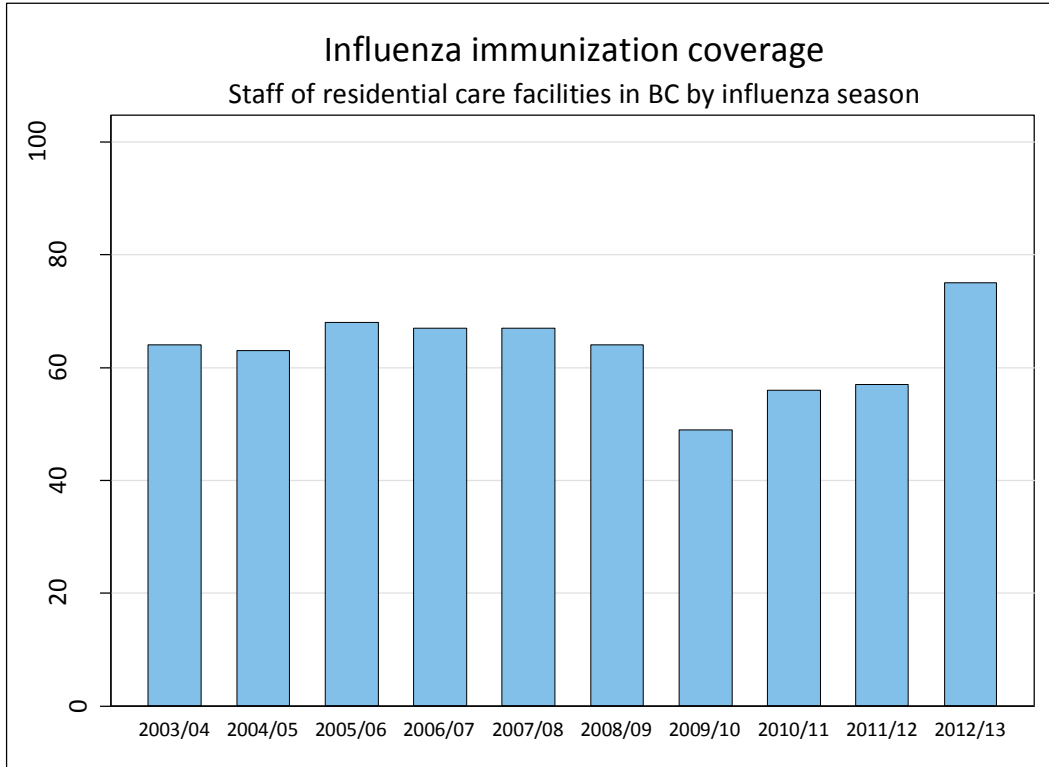


Figure 1: Influenza immunization coverage for staff of residential care facilities, British Columbia from 2003/04 to 2012/13

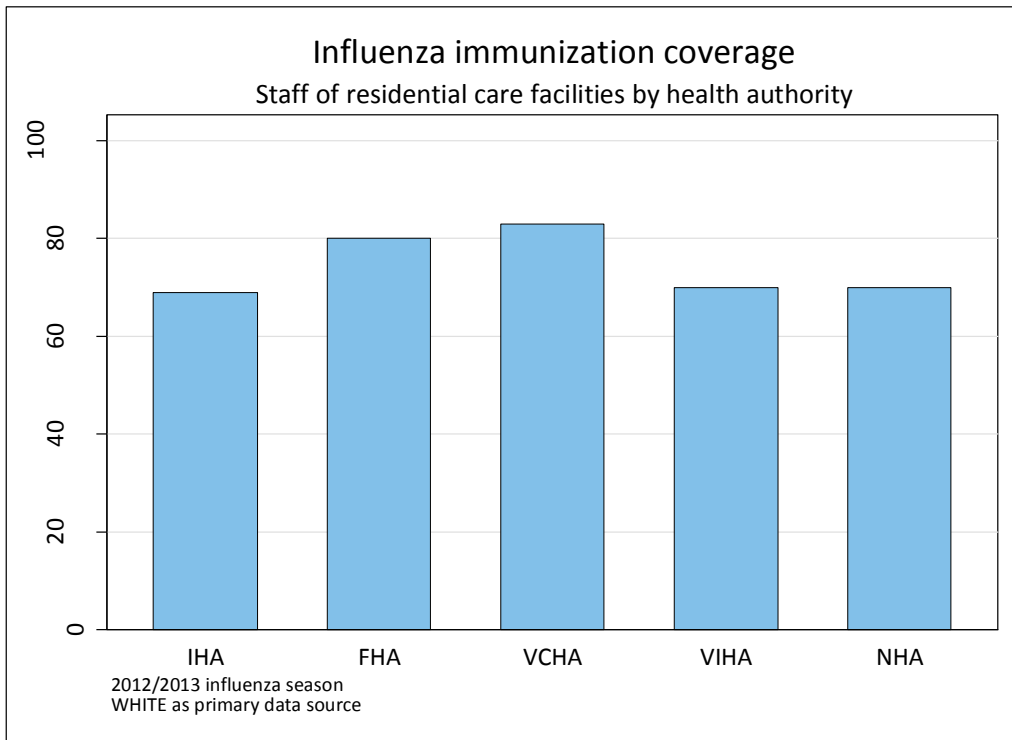


Figure 2: Influenza immunization coverage for staff of residential care facilities by health authority, 2012/13

### Influenza vaccination coverage for staff of residential care facilities British Columbia, 2012/13

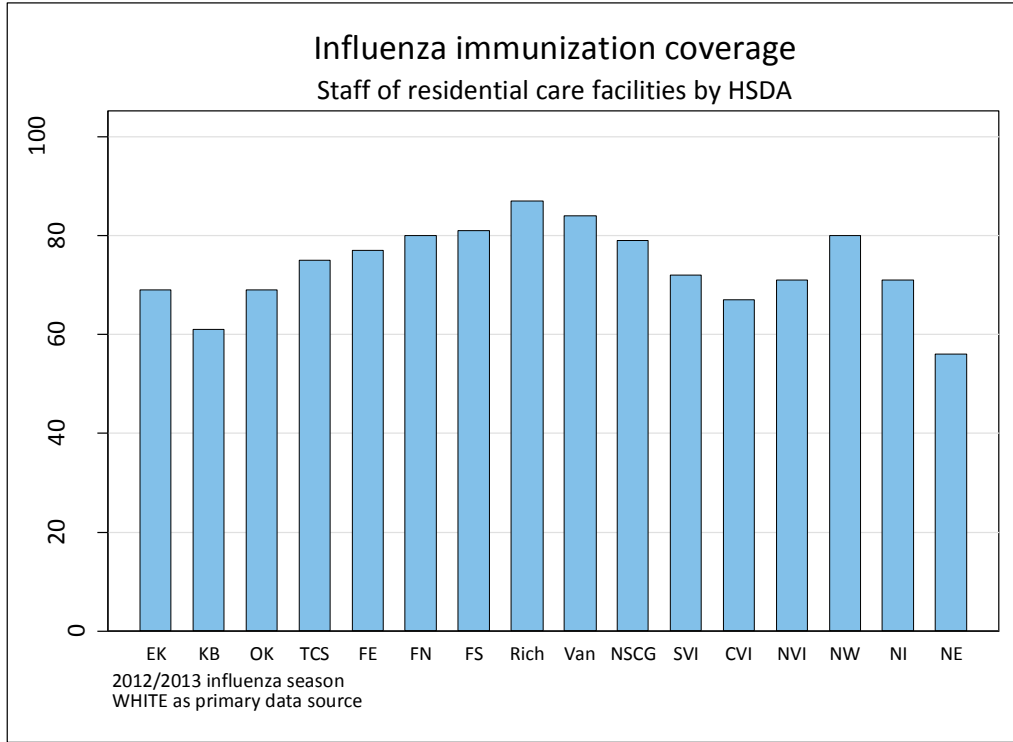


Figure 3: Influenza immunization coverage for staff of residential care facilities by health service delivery area, 2012/13

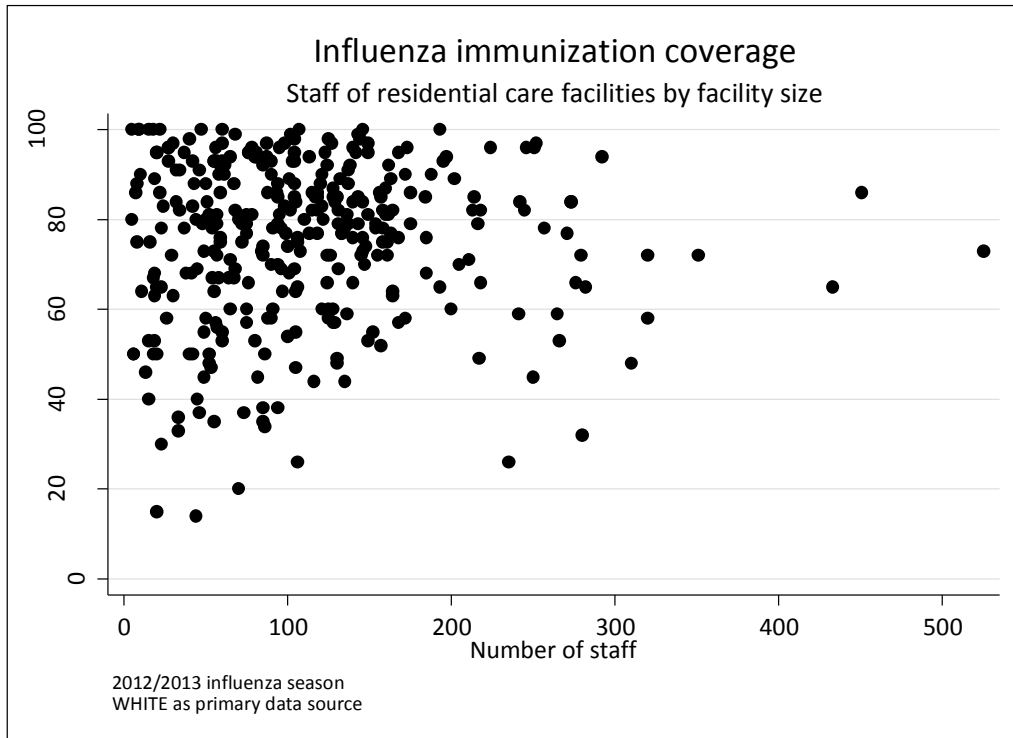


Figure 4: Influenza immunization coverage for staff of residential care facilities by facility size, British Columbia 2012/13

## Influenza vaccination coverage for staff of residential care facilities British Columbia, 2012/13

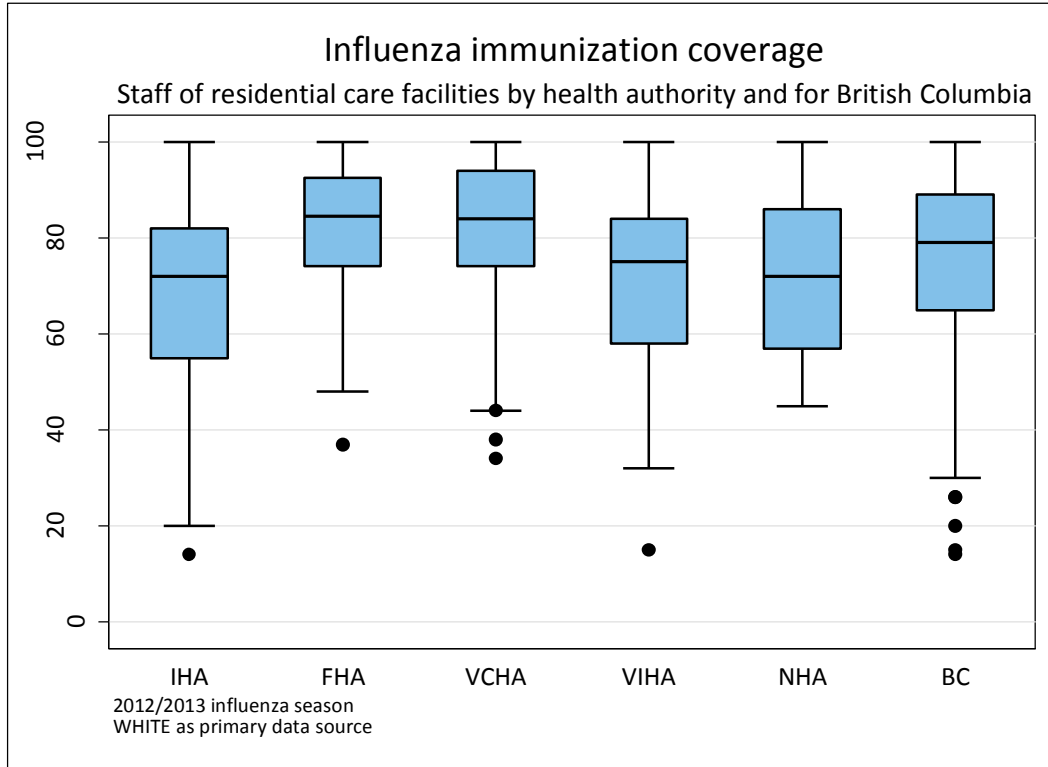


Figure 5: Variation in influenza immunization coverage for staff of residential care facilities by health authority and for British Columbia, 2012/13

Figure 5 illustrates the range of influenza immunization coverage for residential care facilities in each health authority and for BC for the 2012/13 influenza season. The horizontal line below each box represents the lowest observed coverage value (within the expected range); the lower edge of each box represents the 25<sup>th</sup> percentile; the solid horizontal line within each box represent the median coverage value; the upper edge of each box represents the 75<sup>th</sup> percentile; the horizontal line above each box represents the highest observed coverage value (within the expected range); and the dots represent facilities with unusually high or low coverage values which may be outliers.



## Influenza vaccination coverage for staff of residential care facilities British Columbia, 2012/13

### Appendix

Table 5A: Immunization coverage for staff of residential care facilities by health authority, health service delivery area, and British Columbia, 2004/05 to 2012/13

Health region		Influenza season									
		2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2009/10 H1N1	2010/11	2011/12	2012/13
<b>INTERIOR</b>	immunized	2889	4036	3477	4512	4196	3300	-	3606	4359	5386
	total staff	5,542	6,296	6,194	7,491	7,491	7,913	-	7,576	8807	7815
	(% immunized)	(52)	(64)	(56)	(60)	(56)	(42)	-	(48)	(49)	(69)
East Kootenay	immunized	486	502	358	449	211	303	-	235	277	655
	total staff	937	704	637	750	400	786	-	633	690	946
	(% immunized)	(52)	(71)	(56)	(60)	(53)	(39)	-	(37)	(40)	(69)
Kootenay Boundary	immunized	342	391	192	386	365	260	-	307	324	538
	total staff	716	747	548	804	859	824	-	878	777	881
	(% immunized)	(48)	(52)	(35)	(48)	(42)	(32)	-	(35)	(42)	(61)
Okanagan	immunized	1655	1987	1994	2439	2363	1809	-	2075	3051	3181
	total staff	3,152	3,318	3,539	4,146	4,142	4,572	-	4,332	5943	4640
	(% immunized)	(53)	(60)	(56)	(59)	(57)	(40)	-	(48)	(51)	(69)
Thomps Carib Shuswap	immunized	406	1156	933	1238	1257	928	-	989	707	1012
	total staff	737	1,527	1,470	1,791	2,090	1,731	-	1,733	1397	1348
	(% immunized)	(55)	(76)	(63)	(69)	(60)	(54)	-	(57)	(51)	(75)
<b>FRASER</b>	immunized	6544	6289	6903	7550	7043	5790	5661	6262	6903	8,756
	total staff	10,376	9,167	9,604	10,319	10,500	10,890	10,795	10,746	11041	10,955
	(% immunized)	(63)	(69)	(72)	(73)	(67)	(53)	(52)	(58)	(63)	(80)
Fraser East	immunized	1359	1263	1399	1386	1246	1118	1010	1303	1370	1409
	total staff	2,158	1,865	1,991	2,070	1,994	2185	2,179	2,109	2093	1,839
	(% immunized)	(63)	(68)	(70)	(67)	(62)	(51)	(46)	(62)	(65)	(77)
Fraser North	immunized	2728	2504	2732	3009	2686	2187	2155	2294	2616	3,362
	total staff	4,040	3,548	3,632	4,003	3,926	3818	3,806	3,982	3955	4,213
	(% immunized)	(68)	(71)	(75)	(75)	(68)	(57)	(57)	(58)	(66)	(80)
Fraser South	immunized	2457	2522	2772	3155	3111	2485	2496	2665	2917	3,985
	total staff	4,178	3,754	3,981	4,246	4,580	4887	4,810	4,655	4993	4,903
	(% immunized)	(59)	(67)	(70)	(74)	(68)	(51)	(52)	(57)	(58)	(81)

### Influenza vaccination coverage for staff of residential care facilities British Columbia, 2012/13

Table 5A (continued): Immunization coverage for staff of residential care facilities by health authority, health service delivery area, and British Columbia, 2004/05 to 2012/13

		Influenza season									
		2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2009/10 H1N1	2010/11	2011/12	2012/13
<b>Health region</b>											
<b>VANCOUVER COASTAL</b>	immunized	6780	6339	6486	6107	6045	5239	4645	5604	5272	6350
	total staff	9,365	8,405	8,669	8,070	8,185	8,564	8,564	8,073	7816	7652
	(% immunized)	(72)	(75)	(75)	(76)	(74)	(61)	(54)	(69)	(67)	(83)
Richmond	immunized	786	758	686	716	755	669	443	586	625	701
	total staff	977	972	922	921	951	930	930	820	903	803
	(% immunized)	(80)	(78)	(74)	(78)	(79)	(72)	(48)	(71)	(69)	(87)
Vancouver	immunized	4586	4368	4440	4128	3818	3342	3138	3734	3445	4196
	total staff	6,309	5,612	5,682	5,344	5,077	5,421	5,421	5,257	4922	5020
	(% immunized)	(73)	(78)	(78)	(77)	(75)	(62)	(58)	(71)	(70)	(84)
N Shore/Coast Garibaldi	immunized	1408	1213	1360	1263	1472	1228	1064	1284	1202	1453
	total staff	2,079	1,821	2,065	1,805	2,157	2,213	2,213	1,996	1991	1829
	(% immunized)	(68)	(67)	(66)	(70)	(68)	(55)	(48)	(64)	(60)	(79)
<b>VANCOUVER ISLAND</b>	immunized	3461	4481	4321	4331	4528	3596	-	4101	4166	5852
	total staff	5,759	6,905	6,882	7,420	7,809	8,382	-	8,681	8244	8370
	(% immunized)	(60)	(65)	(63)	(58)	(58)	(43)	-	(47)	(51)	(70)
South Van Island	immunized	2035	2556	2504	2462	2352	2069	-	2255	2170	3263
	total staff	3,091	3,737	3,931	3,930	4,027	4,364	-	4,322	4016	4563
	(% immunized)	(66)	(68)	(64)	(63)	(58)	(47)	-	(52)	(54)	(72)
Central Van Island	immunized	1242	1527	1336	1492	1724	1132	-	1398	1441	1894
	total staff	2,432	2,461	2,216	2,715	2,931	3,043	-	3,283	3218	2828
	(% immunized)	(51)	(62)	(60)	(55)	(59)	(37)	-	(43)	(45)	(67)
North Van Island	immunized	184	398	481	377	452	395	-	448	555	695
	total staff	236	707	735	775	851	975	-	1,076	1010	979
	(% immunized)	(78)	(56)	(65)	(49)	(53)	(41)	-	(42)	(55)	(71)

**Influenza vaccination coverage for staff of residential care facilities  
British Columbia, 2012/13**

Table 5A (continued): Immunization coverage for staff of residential care facilities by health authority, health service delivery area, and British Columbia, 2004/05 to 2012/13

Health region		Influenza season									
		2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2009/10 H1N1	2010/11	2011/12	2012/13
<b>NORTHERN</b>	immunized	679	1157	887	845	779	529	424	777	835	1273
	total staff	1,361	2,067	1,560	1,470	1,578	1,651	1,647	1,584	1792	1828
	(% immunized)	(50)	(56)	(57)	(57)	(49)	(32)	(26)	(49)	(47)	(70)
Northwest	immunized	189	562	262	277	183	177	132	284	296	394
	total staff	371	838	393	516	514	434	457	458	511	495
	(% immunized)	(51)	(67)	(67)	(54)	(36)	(41)	(29)	(62)	(58)	(80)
Northern Interior	immunized	347	395	478	402	427	270	225	369	423	616
	total staff	583	669	739	617	652	828	801	842	875	866
	(% immunized)	(60)	(59)	(65)	(65)	(65)	(33)	(28)	(44)	(48)	(71)
Northeast	immunized	143	200	147	166	169	82	67	124	116	263
	total staff	407	560	428	337	412	389	389	284	406	467
	(% immunized)	(35)	(36)	(34)	(49)	(41)	(21)	(17)	(44)	(29)	(56)
<b>BC</b>	immunized	20353	22302	22074	23345	22591	18454	-	20350	21535	27617
	total staff	32,403	32,840	32,909	34,770	35,563	37,400	-	36,660	37700	36620
	(% immunized)	(63)	(68)	(67)	(67)	(64)	(49)	-	(56)	(57)	(75)

## Influenza vaccination coverage for staff of residential care facilities British Columbia, 2012/13

### Coverage statistics excluding privately funded residential care facilities

Table 6A: Residential care facilities included by health authority and for BC, 2012/13  
(excluding privately funded residential care facilities)

Health region	Residential care facilities		
	Reported	Total	% reported
Interior	50	58	86
Fraser	83	95	87
Vancouver Coastal	59	62	95
Vancouver Island	61	61	100
Northern	23	23	100
British Columbia	276	299	92

Table 7A: Influenza vaccination coverage for staff of residential care facilities  
by health authority, health service delivery area and for BC, 2012/13  
(excluding privately funded residential care facilities)

Health region	Residential care facility staff		
	Immunized	Total	(%)
<b>Interior</b>	<b>3418</b>	<b>4769</b>	<b>(72)</b>
East Kootenay	496	609	(81)
Kootenay Boundary	314	530	(59)
Okanagan	1725	2471	(70)
Thompson/Cariboo/Shuswap	883	1159	(76)
<b>Fraser</b>	<b>8225</b>	<b>10267</b>	<b>(80)</b>
Fraser East	1409	1839	(77)
Fraser North	3287	4113	(80)
Fraser South	3529	4315	(82)
<b>Vancouver Coastal</b>	<b>6350</b>	<b>7652</b>	<b>(83)</b>
Richmond	701	803	(87)
Vancouver	4196	5020	(84)
N Shore/Coast Garibaldi	1453	1829	(79)
<b>Vancouver Island</b>	<b>5456</b>	<b>7733</b>	<b>(71)</b>
South Vancouver Island	2987	4088	(73)
Central Vancouver Island	1774	2666	(67)
North Vancouver Island	695	979	(71)
<b>Northern</b>	<b>1148</b>	<b>1635</b>	<b>(70)</b>
Northwest	394	495	(80)
Northern Interior	491	673	(73)
Northeast	263	467	(56)
<b>BC</b>	<b>24597</b>	<b>32056</b>	<b>(77)</b>

## Influenza vaccination coverage for staff of residential care facilities British Columbia, 2012/13

### Coverage statistics using BCCDC influenza immunization coverage web application data as the primary data source and WHITE data as the second choice

Table 8A: Data source used to calculate influenza vaccination coverage, 2012/13

Health region	Residential care facilities		
	BCCDC*	WHITE*	Total
Interior	75	2	77
Fraser	88	4	92
Vancouver Coastal	53	6	59
Vancouver Island	79	0	79
Northern	25	0	25
British Columbia	320	12	332

\* BCCDC: facility influenza immunization coverage statistics were entered by health authority staff into an online database or emailed directly to the BCCDC in a spreadsheet.

WHITE: facility influenza immunization coverage statistics were calculated from the Workplace Health Indicator Tracking and Evaluation database.

Table 9A: Influenza vaccination coverage for staff of residential care facilities by health authority, health service delivery area and for BC, 2012/13 (BCCDC web application data as the 1<sup>st</sup> choice; WHITE data as the second choice)

Health region	Residential care facility staff		
	Immunized	Total	(%)
<b>Interior</b>	<b>5396</b>	<b>8837</b>	<b>(61)</b>
East Kootenay	557	947	(59)
Kootenay Boundary	515	1022	(50)
Okanagan	3241	5239	(62)
Thompson/Cariboo/Shuswap	1083	1629	(66)
<b>Fraser</b>	<b>8756</b>	<b>10955</b>	<b>(80)</b>
Fraser East	1409	1839	(77)
Fraser North	3362	4213	(80)
Fraser South	3985	4903	(81)
<b>Vancouver Coastal</b>	<b>6476</b>	<b>8142</b>	<b>(80)</b>
Richmond	700	876	(80)
Vancouver	4295	5244	(82)
N Shore/Coast Garibaldi	1481	2022	(73)
<b>Vancouver Island</b>	<b>5483</b>	<b>7933</b>	<b>(69)</b>
South Vancouver Island	3051	4286	(71)
Central Vancouver Island	1768	2720	(65)
North Vancouver Island	664	927	(72)
<b>Northern</b>	<b>1254</b>	<b>1930</b>	<b>(65)</b>
Northwest	324	450	(72)
Northern Interior	649	947	(69)
Northeast	281	533	(53)
<b>BC</b>	<b>27365</b>	<b>37797</b>	<b>(72)</b>