

Influenza vaccination coverage for staff of residential care facilities British Columbia, 2013/14

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. In August 2012, a new provincial influenza prevention policy was implemented for healthcare workers in British Columbia (BC). The immunization target with the new policy is 95% coverage.

From the 2004/05 to 2011/12 influenza seasons, influenza vaccination coverage for staff of residential care facilities in BC ranged from 49% to 68%. After implementation of the new BC Influenza Prevention Policy, coverage increased to 75% for the 2012/13 season.

The BC Influenza Prevention Policy requires healthcare workers in all health authorities to be vaccinated against influenza or wear a surgical mask while in patient care areas during the influenza season. 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 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. Disciplinary measures for non-compliance were put in abeyance for the 2012/13 season. Disciplinary measures for staff who did not comply with the Policy, including loss of privileges and termination of employment, were enacted for the 2013/14 season.

Objective

- i) To quantify the proportion of staff in residential care facilities in British Columbia who were vaccinated against influenza during the 2013/14 influenza season.

Methods

Influenza immunization coverage for healthcare workers in residential care facilities was calculated at the facility level, health service delivery area level, health authority level, and for BC. There are five regional health authorities, which are comprised of 16 health service delivery areas.

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.

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 of occupational health records, and data entered by health authority staff into a BC Centre for Disease Control (BCCDC) web application. When data from both sources were available for an individual institution, WHITE data were used.

This was the second influenza coverage report for which individual level WHITE data were available. To be included in the WHITE data extract a staff member must have been employed by a health authority and have worked for a minimum of 8 hours during the influenza season. Consistent with the Influenza Prevention Policy, the 2012/13 influenza season was defined as December 2, 2013 to March 31, 2014. 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, and were collected by health authority staff directly from facilities or using administrative, including 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 unchanged from the 2012/13 season and is based on the Ministry's Performance Agreements.

Some healthcare workers worked at multiple facilities during the influenza season. For **facility level** coverage statistics, healthcare workers were included in each facility where they worked for at least 8 hours during the influenza season. This is a change from the 2012/13 coverage report which only included healthcare workers in the facility where they worked the most hours. For **regional level** coverage statistics, healthcare workers were included only in the facility where they worked the most hours, which is unchanged from the 2012/13 coverage report.

Changes in coverage rates over time should be interpreted with caution as the data collection methods have changed over time from aggregate facility level reporting prior to the 2012/13 season to individual healthcare worker level reporting.

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.

Results

Reporting of facilities (tables 1 and 2)

- 305/362 (84%) residential care facilities in BC are included in this report
- 58/362 (16%) facilities included contracted staff in their statistics
- For 84/305 (28%) facilities, data from the WHITE database were used; for 221/305 (72%) facilities, data entered by health authority staff into the BCCDC web application were used because WHITE data were not available

2013/14 influenza vaccination coverage (tables 3 and 4; figures 1 to 5)

- 79% (25,040/31,836) of staff of residential care facilities in BC were vaccinated against influenza, an increase from 57% (21,535/37,700) coverage in 2011/12 and 75% (27,617/36,620) in 2012/13
- 72% to 87% coverage was the range across the five health authorities
- 59% to 89% coverage was the range across the sixteen health service delivery areas
- 0% to 100% coverage was the range across all residential care facilities in BC
- 230/305 (75%) facilities met the 80% immunization coverage target, an increase from 65/334 (19%) facilities in 2011/12 and 157/332 (47%) in 2012/13
- 120/305 (39%) facilities met the new 95% immunization coverage target

Results excluding privately funded facilities (Tables 6 and 7)

- 218/275 (79%) publicly funded or contracted residential facilities were included
- 77% (17,872/23,133) of staff were vaccinated against influenza

Summary

Influenza immunization data were available for the majority of residential care facilities. Influenza vaccination coverage for staff of residential care facilities in BC was 79%, below the new target of 95% coverage and the old target of 80% coverage. 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 were not assessed.

Influenza immunization coverage for residential facility healthcare workers in BC was slightly higher for the 2013/14 season (79%) than for the 2012/13 season (75%). Coverage during the last two influenza seasons was much higher than before the new BC Influenza Prevention Policy was implemented. The increased influenza immunization coverage was almost certainly due to the new Policy, as this was the only apparent change to the program. While the 79% coverage achieved is 22% higher (absolute) than the coverage in 2011/12, substantial room for improvement remains.

Tables and Figures

Table 1: Residential care facilities included by health authority, 2013/14

Health authority	Residential care facilities		
	Reported	Total	% reported
Interior	61	94	65
Fraser	94	103	91
Vancouver Coastal	61	62	98
Vancouver Island	75	79	95
Northern	14	24	58
British Columbia	305	362	84

Table 2: Data source used to calculate influenza vaccination coverage, 2013/14

Health authority	Residential care facilities		
	WHITE*	Aggregate*	Total
Interior	32	29	61
Fraser	7	87	94
Vancouver Coastal	19	42	61
Vancouver Island	14	61	75
Northern	12	2	14
British Columbia	84	221	305

Note: WHITE data were the 1st choice and aggregate reporting was the 2nd choice.

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

Aggregate: facility influenza immunization coverage statistics were reported in aggregate format by health authority staff using an online database.

Table 3: Influenza vaccination coverage for staff of residential care facilities by health authority and health service delivery area, 2013/14

Health authority	Residential care facility staff		
	Immunized	Total	%
Interior	4,801	6,547	73
East Kootenay	626	935	67
Kootenay Boundary	583	836	70
Okanagan	2,272	3,105	73
Thompson/Cariboo/Shuswap	1,320	1,671	79
Fraser	6,059	6,937	87
Fraser East	875	999	88
Fraser North	2,589	3,025	86
Fraser South	2,595	2,913	89
Vancouver Coastal	7,077	8,491	83
Richmond	805	918	88
Vancouver	4,827	5,662	85
N Shore/Coast Garibaldi	1,445	1,911	76
Vancouver Island	6,068	8,429	72
South Vancouver Island	3,273	4,475	73
Central Vancouver Island	2,107	3,106	68
North Vancouver Island	688	848	81
Northern	1,035	1,432	72
Northwest	287	368	78
Northern Interior	574	769	75
Northeast	174	295	59
BC	25,040	31,836	79

Table 4: Residential care facility staff influenza vaccination coverage by health authority, 2004/05 to 2013/14

Health authority	Influenza immunization coverage (%) for staff of residential care facilities by influenza season									
	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
Interior	52	64	56	60	56	42	48	49	69	73
Fraser	63	69	72	73	67	53	58	63	80	87
Vancouver Coastal	72	75	75	76	74	61	69	67	83	83
Vancouver Island	60	65	63	58	58	43	47	51	70	72
Northern	50	56	57	58	49	32	49	47	70	72
British Columbia	63	68	67	67	64	49	56	57	75	79

Figure 1: Influenza immunization coverage for staff of residential care facilities, 2003/04 to 2013/14

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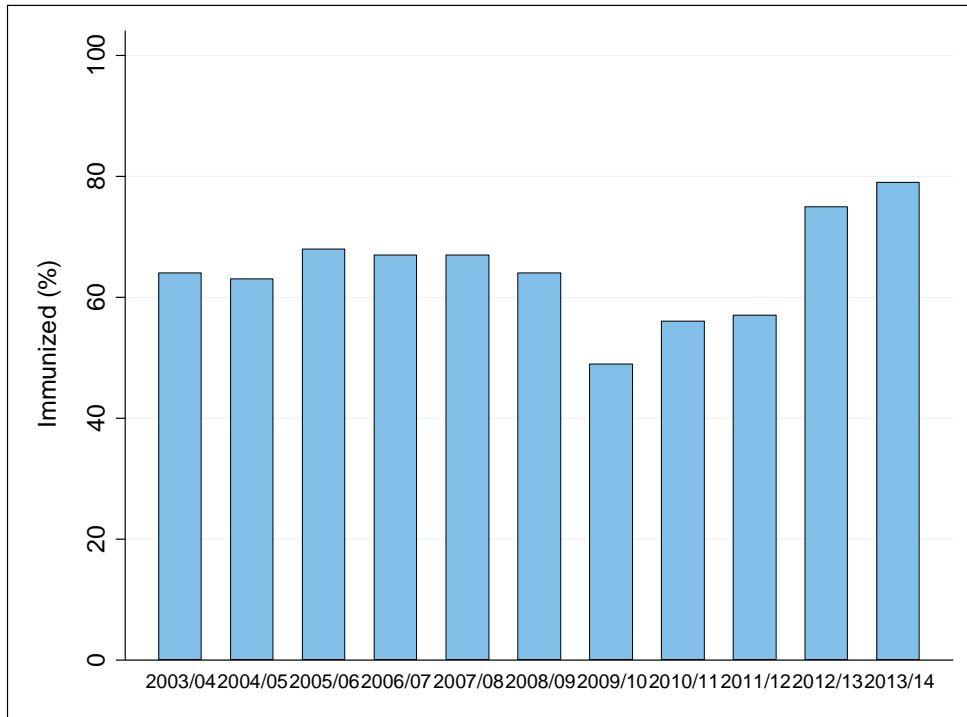


Figure 2: Influenza immunization coverage for staff of residential care facilities by health authority, 2013/14

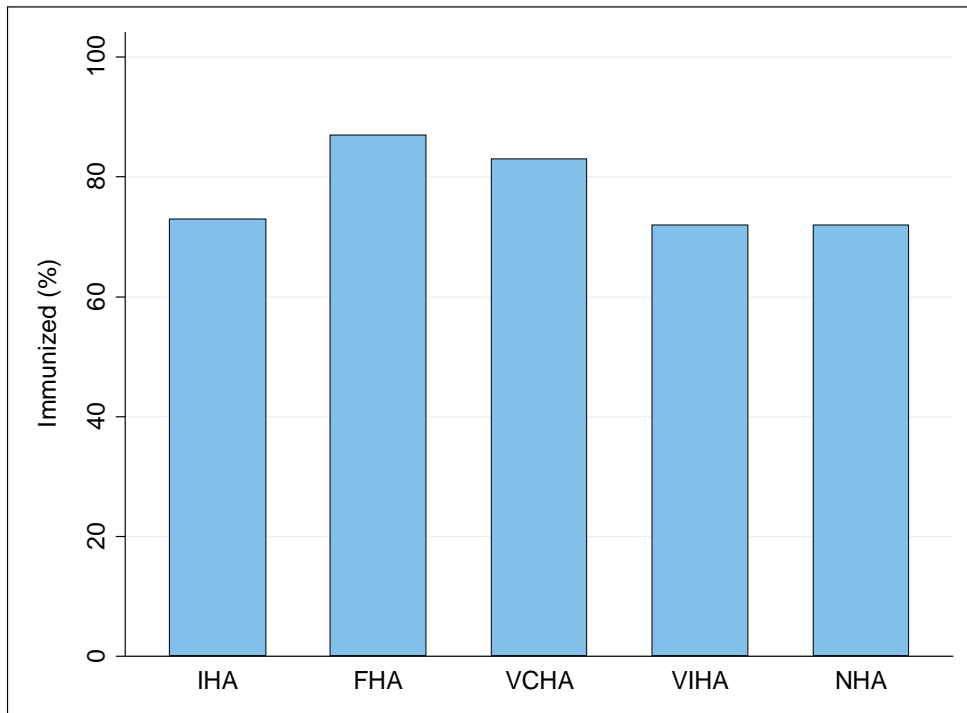


Figure 3: Influenza immunization coverage for staff of residential care facilities by health service delivery area, 2013/14

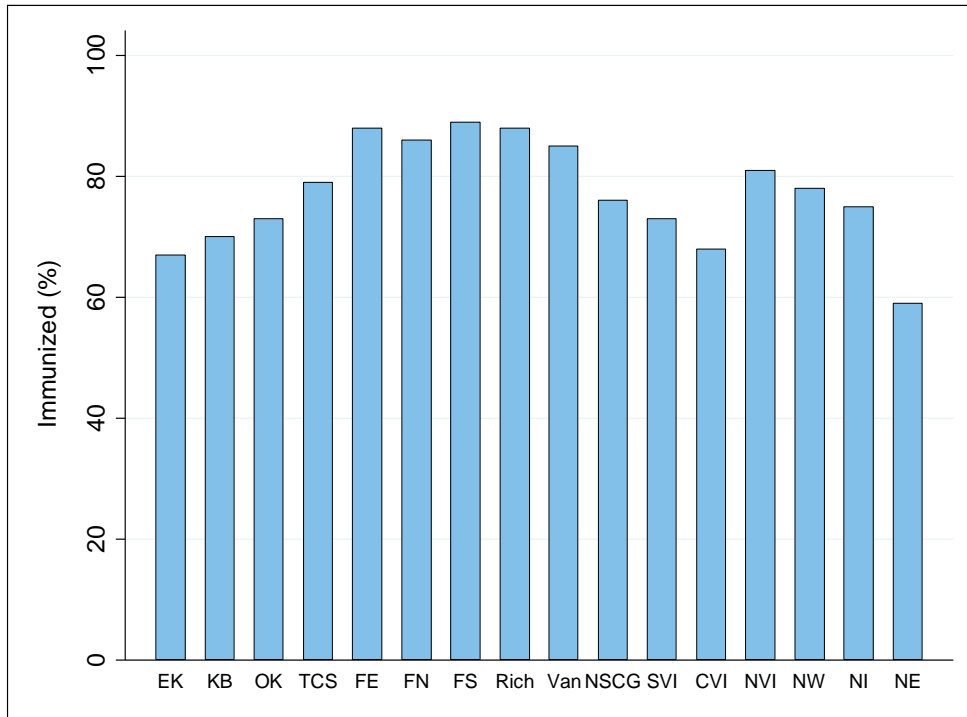


Figure 4: Influenza immunization coverage for staff of residential care facilities by facility size (number of staff), 2013/14

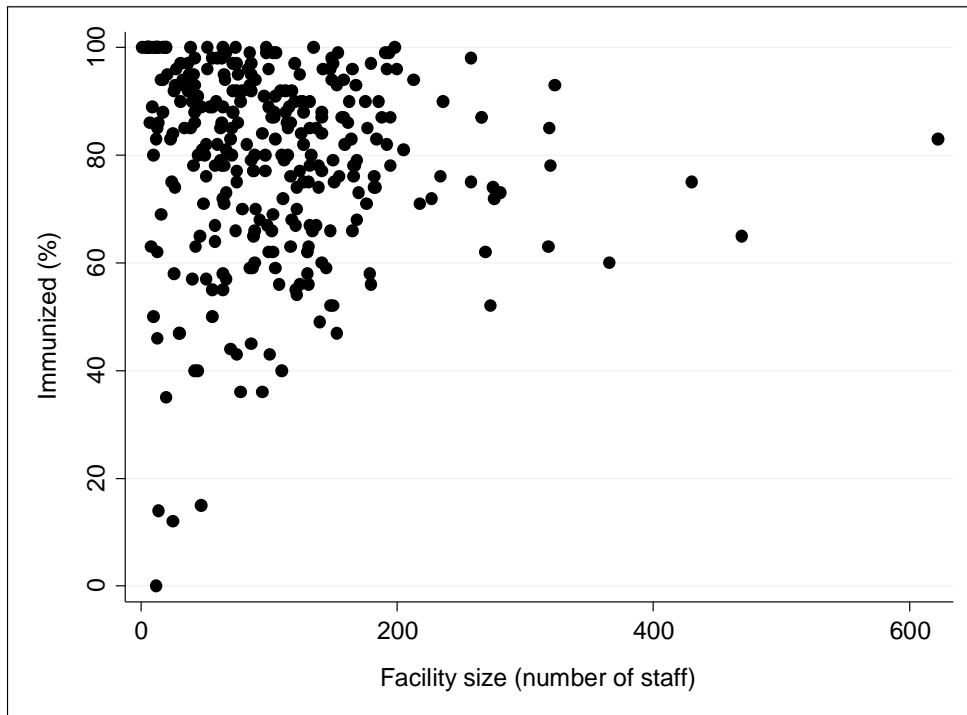


Figure 5: Influenza immunization coverage for staff of residential care facilities by facility within each health authority, 2013/14

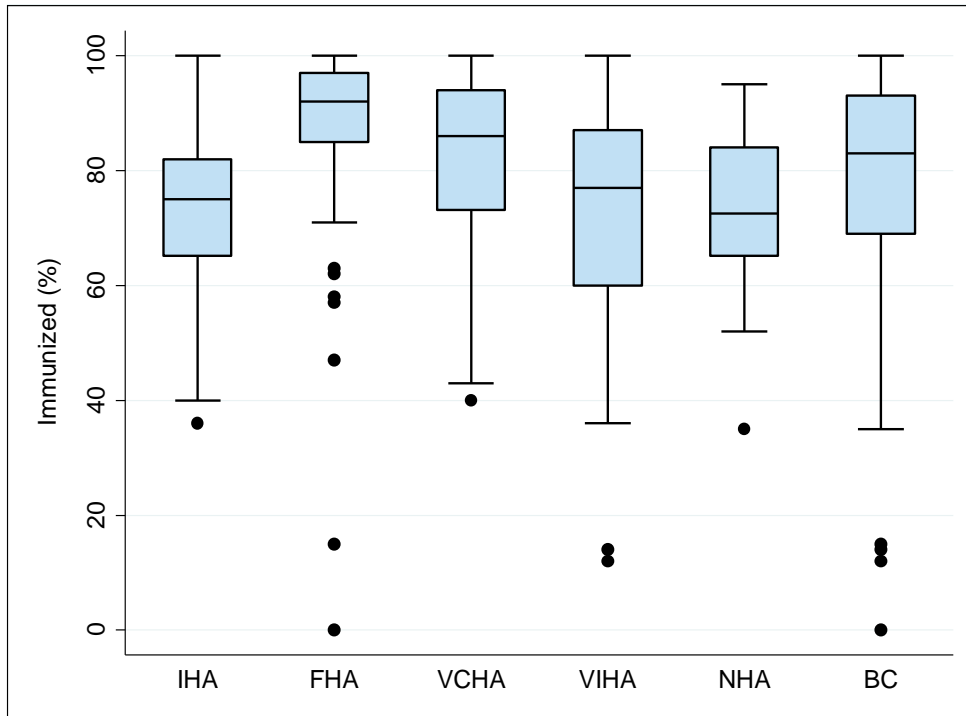


Figure 5 illustrates the range of influenza immunization coverage for residential care facilities in each health authority and for BC for the 2013/14 influenza season. The horizontal line below each box represents the lowest observed coverage value that is greater than or equal to the first quartile minus 1.5 times the interquartile range; the lower edge of each box represents the 25th percentile; the solid horizontal line within each box represent the median coverage value; the upper edge of each box represents the 75th percentile; the horizontal line above each box represents the highest observed coverage value that is less than or equal to the third quartile plus the interquartile range; and the dots represent facilities with unusually high or low coverage values which may be outliers.

Table 5: Immunization coverage for staff of residential care facilities by health authority and health service delivery area, 2005/06 to 2013/14

Health authority		Influenza season									
		2005/06	2006/07	2007/08	2008/09	2009/10	2009/10 H1N1	2010/11	2011/12	2012/13	2013/14
INTERIOR	immunized	4,036	3,477	4,512	4,196	3,300	-	3,606	4,359	5,386	4,801
	total staff	6,296	6,194	7,491	7,491	7,913	-	7,576	8,807	7,815	6,547
	% immunized	64	56	60	56	42	-	48	49	69	73
East Kootenay	immunized	502	358	449	211	303	-	235	277	655	626
	total staff	704	637	750	400	786	-	633	690	946	935
	% immunized	71	56	60	53	39	-	37	40	69	67
Kootenay Boundary	immunized	391	192	386	365	260	-	307	324	538	583
	total staff	747	548	804	859	824	-	878	777	881	836
	% immunized	52	35	48	42	32	-	35	42	61	70
Okanagan	immunized	1,987	1,994	2,439	2,363	1,809	-	2,075	3,051	3,181	2,272
	total staff	3,318	3,539	4,146	4,142	4,572	-	4,332	5,943	4,640	3,105
	% immunized	60	56	59	57	40	-	48	51	69	73
Thomps Carib Shuswap	immunized	1,156	933	1,238	1,257	928	-	989	707	1,012	1,320
	total staff	1,527	1,470	1,791	2,090	1,731	-	1,733	1,397	1,348	1,671
	% immunized	76	63	69	60	54	-	57	51	75	79
FRASER	immunized	6,289	6,903	7,550	7,043	5,790	5,661	6,262	6,903	8,756	6,059
	total staff	9,167	9,604	10,319	10,500	10,890	10,795	10,746	11,041	10,955	6,937
	% immunized	69	72	73	67	53	52	58	63	80	87
Fraser East	immunized	1,263	1,399	1,386	1,246	1,118	1,010	1,303	1,370	1,409	875
	total staff	1,865	1,991	2,070	1,994	2,185	2,179	2,109	2,093	1,839	999
	% immunized	68	70	67	62	51	46	62	65	77	88
Fraser North	immunized	2,504	2,732	3,009	2,686	2,187	2,155	2,294	2,616	3,362	2,589
	total staff	3,548	3,632	4,003	3,926	3,818	3,806	3,982	3,955	4,213	3,025
	% immunized	71	75	75	68	57	57	58	66	80	86
Fraser South	immunized	2,522	2,772	3,155	3,111	2,485	2,496	2,665	2,917	3,985	2,595
	total staff	3,754	3,981	4,246	4,580	4,887	4,810	4,655	4,993	4,903	2,913
	% immunized	67	70	74	68	51	52	57	58	81	89

Table 5 (continued): Immunization coverage for staff of residential care facilities by health authority and health service delivery area, 2005/06 to 2013/14

Health authority		Influenza season									
		2005/06	2006/07	2007/08	2008/09	2009/10	2009/10 H1N1	2010/11	2011/12	2012/13	2013/14
VANCOUVER COASTAL	immunized	6,339	6,486	6,107	6,045	5,239	4,645	5,604	5,272	6,350	7,077
	total staff	8,405	8,669	8,070	8,185	8,564	8,564	8,073	7,816	7,652	8,491
	% immunized	75	75	76	74	61	54	69	67	83	83
Richmond	immunized	758	686	716	755	669	443	586	625	701	805
	total staff	972	922	921	951	930	930	820	903	803	918
	% immunized	78	74	78	79	72	48	71	69	87	88
Vancouver	immunized	4,368	4,440	4,128	3,818	3,342	3,138	3,734	3,445	4,196	4,827
	total staff	5,612	5,682	5,344	5,077	5,421	5,421	5,257	4,922	5,020	5,662
	% immunized	78	78	77	75	62	58	71	70	84	85
N Shore/Coast Garibaldi	immunized	1,213	1,360	1,263	1,472	1,228	1,064	1,284	1,202	1,453	1,445
	total staff	1,821	2,065	1,805	2,157	2,213	2,213	1,996	1,991	1,829	1,911
	% immunized	67	66	70	68	55	48	64	60	79	76
VANCOUVER ISLAND	immunized	4,481	4,321	4,331	4,528	3,596	-	4,101	4,166	5,852	6,068
	total staff	6,905	6,882	7,420	7,809	8,382	-	8,681	8,244	8,370	8,429
	% immunized	65	63	58	58	43	-	47	51	70	72
South Van Island	immunized	2,556	2,504	2,462	2,352	2,069	-	2,255	2,170	3,263	3,273
	total staff	3,737	3,931	3,930	4,027	4,364	-	4,322	4,016	4,563	4,475
	% immunized	68	64	63	58	47	-	52	54	72	73
Central Van Island	immunized	1,527	1,336	1,492	1,724	1,132	-	1,398	1,441	1,894	2,107
	total staff	2,461	2,216	2,715	2,931	3,043	-	3,283	3,218	2,828	3,106
	% immunized	62	60	55	59	37	-	43	45	67	68
North Van Island	immunized	398	481	377	452	395	-	448	555	695	688
	total staff	707	735	775	851	975	-	1,076	1,010	979	848
	% immunized	56	65	49	53	41	-	42	55	71	81

Table 5 (continued): Immunization coverage for staff of residential care facilities by health authority and health service delivery area, 2005/06 to 2013/14

Health authority		Influenza season									
		2005/06	2006/07	2007/08	2008/09	2009/10	2009/10 H1N1	2010/11	2011/12	2012/13	2013/14
NORTHERN	immunized	1,157	887	845	779	529	424	777	835	1,273	1,035
	total staff	2,067	1,560	1,470	1,578	1,651	1,647	1,584	1,792	1,828	1,432
	% immunized	56	57	57	49	32	26	49	47	70	72
Northwest	immunized	562	262	277	183	177	132	284	296	394	287
	total staff	838	393	516	514	434	457	458	511	495	368
	% immunized	67	67	54	36	41	29	62	58	80	78
Northern Interior	immunized	395	478	402	427	270	225	369	423	616	574
	total staff	669	739	617	652	828	801	842	875	866	769
	% immunized	59	65	65	65	33	28	44	48	71	75
Northeast	immunized	200	147	166	169	82	67	124	116	263	174
	total staff	560	428	337	412	389	389	284	406	467	295
	% immunized	36	34	49	41	21	17	44	29	56	59
BC	immunized	22,302	22,074	23,345	22,591	18,454	-	20,350	21,535	27,617	25,040
	total staff	32,840	32,909	34,770	35,563	37,400	-	36,660	37,700	36,620	31,836
	% immunized	68	67	67	64	49	-	56	57	75	79

Coverage excluding privately funded residential care facilities

Table 6: Number and proportion of residential care facilities reporting coverage by health authority, 2013/14
 (excluding privately funded residential care facilities)

Health authority	Residential care facilities		
	Reported	Total	% reported
Interior	43	76	57
Fraser	85	94	90
Vancouver Coastal	20	21	95
Vancouver Island	58	62	94
Northern	12	22	55
British Columbia	218	275	79

Coverage excluding privately funded residential care facilities (cont'd)

Table 7: Influenza vaccination coverage for staff of residential care facilities by health authority and health service delivery area, 2013/14 (excluding privately funded residential care facilities)

Health authority	Residential care facility staff		
	Immunized	Total	%
Interior	3,375	4,655	73
East Kootenay	311	436	71
Kootenay Boundary	351	539	65
Okanagan	1,688	2,346	72
Thompson/Cariboo/Shuswap	1,025	1,334	77
Fraser	5,676	6,476	88
Fraser East	875	999	88
Fraser North	2,514	2,938	86
Fraser South	2,287	2,539	90
Vancouver Coastal	2,265	2,970	76
Richmond	350	410	85
Vancouver	1,179	1,495	79
N Shore/Coast Garibaldi	736	1,065	69
Vancouver Island	5,626	7,734	73
South Vancouver Island	2,969	4,012	74
Central Vancouver Island	1,969	2,874	69
North Vancouver Island	688	848	81
Northern	930	1,298	72
Northwest	287	368	78
Northern Interior	469	635	74
Northeast	174	295	59
BC	17,872	23,133	77