

Influenza vaccination coverage for staff of residential care facilities British Columbia, 2014/15

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 2005/06 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 an online immunization reporting website. Disciplinary measures for staff who do not comply with the Policy include loss of privileges and termination of employment. These measures were put in abeyance for the 2012/13 season but were enacted for the 2013/14 and 2014/15 seasons.

Objective

- i) To quantify the percentage of staff in residential care facilities in British Columbia who were vaccinated against influenza during the 2014/15 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 third season of influenza coverage reporting using WHITE data. Staff whose records were included in the analysis must have been employed by a health authority and have worked for a minimum of 8 hours during the influenza season, defined as the period December 1, 2014 to March 31, 2015. 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 2013/14 season and is based on the Ministry's Performance Agreements.

Some healthcare workers worked at multiple facilities during the influenza season. For **regional level coverage statistics** at the provincial, health authority or health service delivery area level, each healthcare worker was included only in the facility where they worked the most hours. **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 the same method that was used for the 2013/14 coverage report but a change from the 2012/13 coverage report which only included healthcare workers in the facility where they worked the most hours for both regional and facility level coverage statistics.

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)

- 296/371 (80%) residential care facilities in BC are included in this report
- For 84/296 (28%) facilities, data from the WHITE database were used; for 212/296 (72%) facilities, data entered by health authority staff into the BCCDC web application were used because WHITE data were not available

2014/15 influenza vaccination coverage (tables 3 and 4; figures 1 to 5)

- 77% (27,167/35,133) 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 similar to 75% (27,617/36,620) in 2012/13, and 79% (25,040/31,836) in 2013/14.
- 71% to 85% coverage was the range across the five health authorities
- 59% to 91% coverage was the range across the sixteen health service delivery areas
- 8% to 100% coverage was the range across all residential care facilities in BC
- 151/296 (51%) facilities met the 80% immunization coverage target; compared with 65/334 (19%) in 2011/12, 157/332 (47%) in 2012/13, and 230/305 (75%) in 2013/14
- 49/296 (17%) facilities met the new 95% immunization coverage target

Results excluding privately funded facilities (tables 6 and 7)

- 216/265 (82%) publicly funded or contracted residential facilities were included
- 77% (20,545/26,746) 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 77%, below the new target of 95% coverage and the old target of 80% coverage. The coverage was the same (77%) 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 similar for the 2014/15 season (77%) compared to the 2012/13 season (75%) and 2013/14 (79%) seasons. Coverage during the last three 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. However, substantial room for improvement remains.

Tables and Figures

Table 1: Residential care facilities included by health authority, 2014/15

Health authority	Residential care facilities		
	Reported	Total	% reported
Interior	78	97	80
Fraser	72	102	71
Vancouver Coastal	46	62	74
Vancouver Island	84	86	98
Northern	16	24	67
British Columbia	296	371	80

Table 2: Data source used to calculate influenza vaccination coverage, 2014/15

Health authority	Residential care facilities		
	WHITE*	Aggregate*	Total
Interior	33	45	78
Fraser	7	65	72
Vancouver Coastal	18	28	46
Vancouver Island	14	70	84
Northern	12	4	16
British Columbia	84	212	296

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, health service delivery area, 2014/15

Health authority	Residential care facility staff		
	Immunized	Total	%
Interior	5,819	7,878	74
East Kootenay	594	802	74
Kootenay Boundary	522	809	65
Okanagan	3,286	4,515	73
Thompson/Cariboo/Shuswap	1,417	1,752	81
Fraser	8,247	10,084	82
Fraser East	1,434	1,755	82
Fraser North	3,577	4,562	78
Fraser South	3,236	3,767	86
Vancouver Coastal	5,652	6,672	85
Richmond	644	706	91
Vancouver	3,881	4,514	86
N Shore/Coast Garibaldi	1,127	1,452	78
Vancouver Island	6,350	8,941	71
South Vancouver Island	3,487	4,992	70
Central Vancouver Island	2,163	3,117	69
North Vancouver Island	700	832	84
Northern	1,099	1,558	71
Northwest	327	401	82
Northern Interior	594	857	69
Northeast	178	300	59
BC	27,167	35,133	77

Table 4: Residential care facility staff influenza vaccination coverage by health authority, 2005/06 to 2014/15

Health authority	Influenza immunization coverage (%) for staff of residential care facilities by influenza season									
	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Interior	64	56	60	56	42	48	49	69	73	74
Fraser	69	72	73	67	53	58	63	80	87	82
Vancouver Coastal	75	75	76	74	61	69	67	83	83	85
Vancouver Island	65	63	58	58	43	47	51	70	72	71
Northern	56	57	58	49	32	49	47	70	72	71
British Columbia	68	67	67	64	49	56	57	75	79	77

Figure 1: Influenza immunization coverage for staff of residential care facilities, 2005/06 to 2014/15

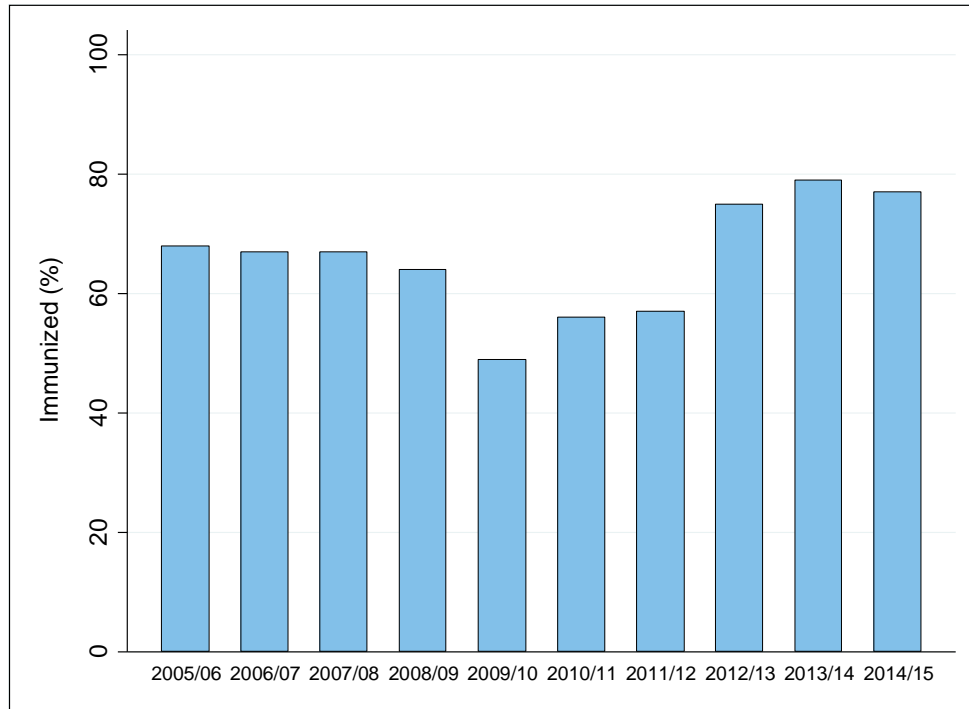


Figure 2: Influenza immunization coverage for staff of residential care facilities by health authority, 2014/15

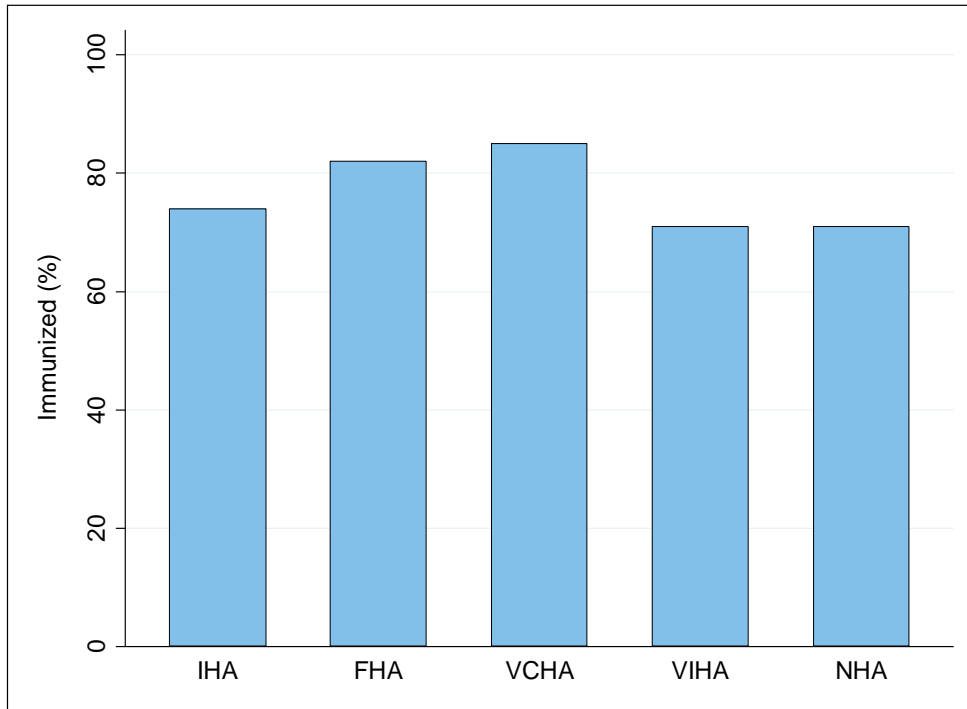


Figure 3: Influenza immunization coverage for staff of residential care facilities by health service delivery area, 2014/15

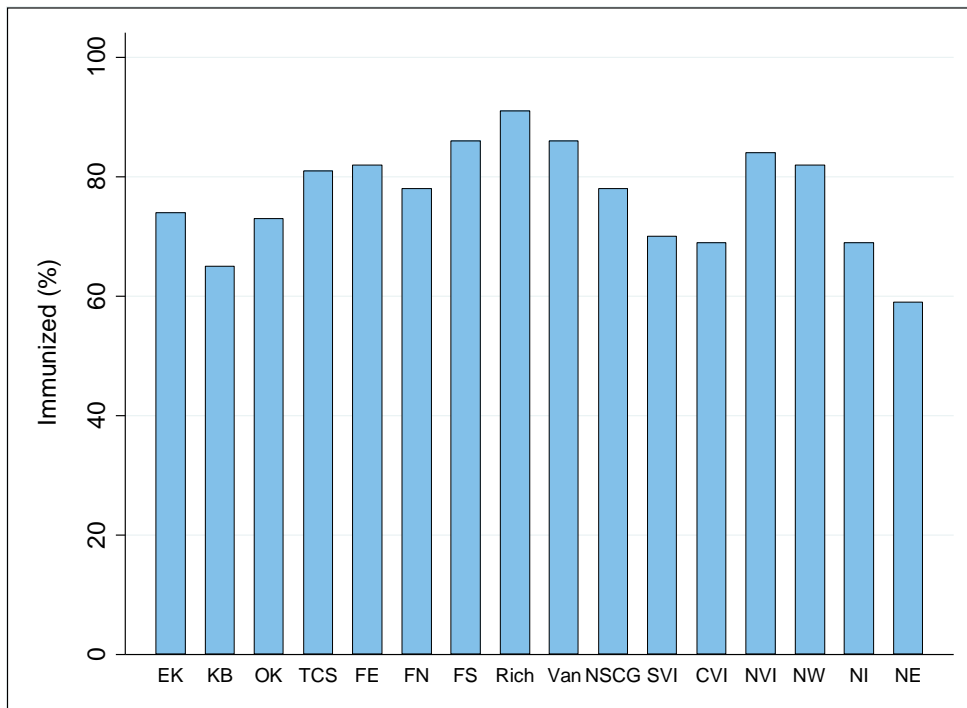


Figure 4: Influenza immunization coverage for staff of residential care facilities by facility size (number of staff), 2014/15

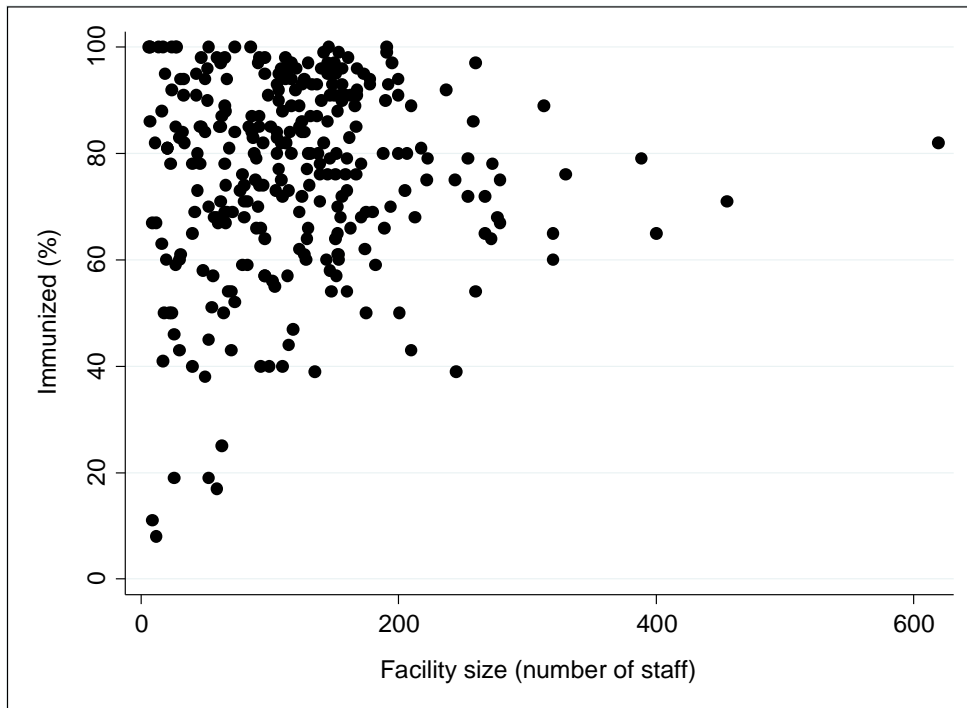


Figure 5: Influenza immunization coverage for staff of residential care facilities by facility within each health authority, 2014/15

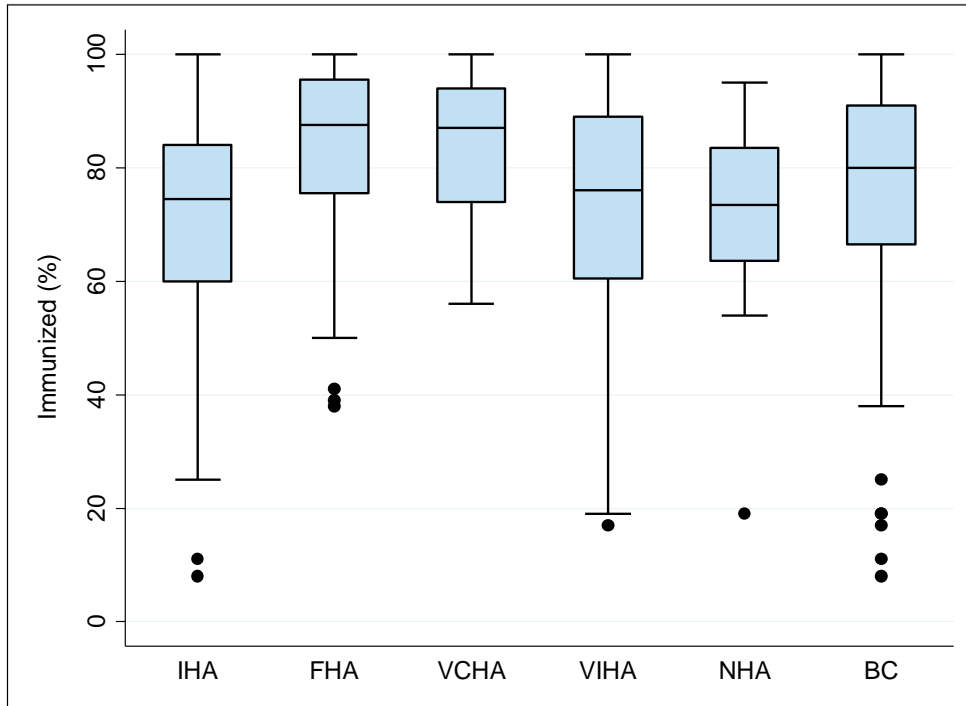


Figure 5 illustrates the range of influenza immunization coverage for residential care facilities in each health authority and for BC for the 2014/15 influenza season. The horizontal line below each box represents the lowest observed coverage value that is greater than or equal to the first quartile 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, health service delivery area, 2006/07 to 2014/15

Health authority		Influenza season									
		2006/07	2007/08	2008/09	2009/10	2009/10 H1N1	2010/11	2011/12	2012/13	2013/14	2014/15
INTERIOR	immunized	3,477	4,512	4,196	3,300	-	3,606	4,359	5,386	4,801	5,819
	total staff	6,194	7,491	7,491	7,913	-	7,576	8,807	7,815	6,547	7,878
	% immunized	56	60	56	42	-	48	49	69	73	74
East Kootenay	immunized	358	449	211	303	-	235	277	655	626	594
	total staff	637	750	400	786	-	633	690	946	935	802
	% immunized	56	60	53	39	-	37	40	69	67	74
Kootenay Boundary	immunized	192	386	365	260	-	307	324	538	583	522
	total staff	548	804	859	824	-	878	777	881	836	809
	% immunized	35	48	42	32	-	35	42	61	70	65
Okanagan	immunized	1,994	2,439	2,363	1,809	-	2,075	3,051	3,181	2,272	3,286
	total staff	3,539	4,146	4,142	4,572	-	4,332	5,943	4,640	3,105	4,515
	% immunized	56	59	57	40	-	48	51	69	73	73
Thomps Carib Shuswap	immunized	933	1,238	1,257	928	-	989	707	1,012	1,320	1,417
	total staff	1,470	1,791	2,090	1,731	-	1,733	1,397	1,348	1,671	1,752
	% immunized	63	69	60	54	-	57	51	75	79	81
FRASER	immunized	6,903	7,550	7,043	5,790	5,661	6,262	6,903	8,756	6,059	8,247
	total staff	9,604	10,319	10,500	10,890	10,795	10,746	11,041	10,955	6,937	10,084
	% immunized	72	73	67	53	52	58	63	80	87	82
Fraser East	immunized	1,399	1,386	1,246	1,118	1,010	1,303	1,370	1,409	875	1,434
	total staff	1,991	2,070	1,994	2,185	2,179	2,109	2,093	1,839	999	1,755
	% immunized	70	67	62	51	46	62	65	77	88	82
Fraser North	immunized	2,732	3,009	2,686	2,187	2,155	2,294	2,616	3,362	2,589	3,577
	total staff	3,632	4,003	3,926	3,818	3,806	3,982	3,955	4,213	3,025	4,562
	% immunized	75	75	68	57	57	58	66	80	86	78
Fraser South	immunized	2,772	3,155	3,111	2,485	2,496	2,665	2,917	3,985	2,595	3,236
	total staff	3,981	4,246	4,580	4,887	4,810	4,655	4,993	4,903	2,913	3,767
	% immunized	70	74	68	51	52	57	58	81	89	86

Table 5 (continued): Immunization coverage for staff of residential care facilities by health authority, health service delivery area, 2006/07 to 2014/15

Health authority		Influenza season									
		2006/07	2007/08	2008/09	2009/10	2009/10 H1N1	2010/11	2011/12	2012/13	2013/14	2014/15
VANCOUVER COASTAL	immunized	6,486	6,107	6,045	5,239	4,645	5,604	5,272	6,350	7,077	5,652
	total staff	8,669	8,070	8,185	8,564	8,564	8,073	7,816	7,652	8,491	6,672
	% immunized	75	76	74	61	54	69	67	83	83	85
Richmond	immunized	686	716	755	669	443	586	625	701	805	644
	total staff	922	921	951	930	930	820	903	803	918	706
	% immunized	74	78	79	72	48	71	69	87	88	91
Vancouver	immunized	4,440	4,128	3,818	3,342	3,138	3,734	3,445	4,196	4,827	3,881
	total staff	5,682	5,344	5,077	5,421	5,421	5,257	4,922	5,020	5,662	4,514
	% immunized	78	77	75	62	58	71	70	84	85	86
N Shore/Coast Garibaldi	immunized	1,360	1,263	1,472	1,228	1,064	1,284	1,202	1,453	1,445	1,127
	total staff	2,065	1,805	2,157	2,213	2,213	1,996	1,991	1,829	1,911	1,452
	% immunized	66	70	68	55	48	64	60	79	76	78
VANCOUVER ISLAND	immunized	4,321	4,331	4,528	3,596	-	4,101	4,166	5,852	6,068	6,350
	total staff	6,882	7,420	7,809	8,382	-	8,681	8,244	8,370	8,429	8,941
	% immunized	63	58	58	43	-	47	51	70	72	71
South Van Island	immunized	2,504	2,462	2,352	2,069	-	2,255	2,170	3,263	3,273	3,487
	total staff	3,931	3,930	4,027	4,364	-	4,322	4,016	4,563	4,475	4,992
	% immunized	64	63	58	47	-	52	54	72	73	70
Central Van Island	immunized	1,336	1,492	1,724	1,132	-	1,398	1,441	1,894	2,107	2,163
	total staff	2,216	2,715	2,931	3,043	-	3,283	3,218	2,828	3,106	3,117
	% immunized	60	55	59	37	-	43	45	67	68	69
North Van Island	immunized	481	377	452	395	-	448	555	695	688	700
	total staff	735	775	851	975	-	1,076	1,010	979	848	832
	% immunized	65	49	53	41	-	42	55	71	81	84

Table 5 (continued): Immunization coverage for staff of residential care facilities by health authority, health service delivery area, 2006/07 to 2014/15

Health authority		Influenza season									
		2006/07	2007/08	2008/09	2009/10	2009/10 H1N1	2010/11	2011/12	2012/13	2013/14	2014/15
NORTHERN	immunized	887	845	779	529	424	777	835	1,273	1,035	1,099
	total staff	1,560	1,470	1,578	1,651	1,647	1,584	1,792	1,828	1,432	1,558
	% immunized	57	57	49	32	26	49	47	70	72	71
Northwest	immunized	262	277	183	177	132	284	296	394	287	327
	total staff	393	516	514	434	457	458	511	495	368	401
	% immunized	67	54	36	41	29	62	58	80	78	82
Northern Interior	immunized	478	402	427	270	225	369	423	616	574	594
	total staff	739	617	652	828	801	842	875	866	769	857
	% immunized	65	65	65	33	28	44	48	71	75	69
Northeast	immunized	147	166	169	82	67	124	116	263	174	178
	total staff	428	337	412	389	389	284	406	467	295	300
	% immunized	34	49	41	21	17	44	29	56	59	59
BC	immunized	22,074	23,345	22,591	18,454	-	20,350	21,535	27,617	25,040	27,167
	total staff	32,909	34,770	35,563	37,400	-	36,660	37,700	36,620	31,836	35,133
	% immunized	67	67	64	49	-	56	57	75	79	77

Coverage excluding privately funded residential care facilities

Table 6: Number and proportion of residential care facilities reporting coverage by health authority, 2014/15
(excluding privately funded residential care facilities)

Health authority	Residential care facilities		
	Reported	Total	% reported
Interior	48	59	81
Fraser	66	93	71
Vancouver Coastal	20	21	95
Vancouver Island	68	70	97
Northern	14	22	64
British Columbia	216	265	82

Table 7: Influenza vaccination coverage for staff of residential care facilities by health authority, health service delivery area, 2014/15
(excluding privately funded residential care facilities)

Health authority	Residential care facility staff		
	Immunized	Total	%
Interior	3,545	4,655	76
East Kootenay	374	475	79
Kootenay Boundary	315	504	63
Okanagan	1,735	2,278	76
Thompson/Cariboo/Shuswap	1,121	1,398	80
Fraser	7,788	9,564	81
Fraser East	1,434	1,755	82
Fraser North	3,480	4,450	78
Fraser South	2,874	3,359	86
Vancouver Coastal	2,340	2,955	79
Richmond	345	398	87
Vancouver	1,219	1,493	82
N Shore/Coast Garibaldi	776	1,064	73
Vancouver Island	5,864	8,200	72
South Vancouver Island	3,113	4,425	70
Central Vancouver Island	2,051	2,943	70
North Vancouver Island	700	832	84
Northern	1,008	1,372	73
Northwest	327	401	82
Northern Interior	503	671	75
Northeast	178	300	59
BC	20,545	26,746	77