

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

Background

Immunization coverage assessment is an important part of a quality immunization program and 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 healthcare workers in acute care facilities was 60% 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.

The BC Influenza Prevention Policy requires healthcare workers in all health authorities to be vaccinated against influenza or to 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.

From the 2005/06 to 2011/12 influenza seasons, influenza vaccination coverage for staff of acute care facilities in BC ranged from 35% to 46%. After implementation of the new BC Influenza Prevention Policy, coverage increased to 74% for 2012/13, and 75% for the 2013/14 season.

Objective

- i) To quantify the percentage of staff in acute care facilities in British Columbia who were vaccinated against influenza during the 2014/15 influenza season.

Methods

Influenza immunization coverage for healthcare workers in acute 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, and a Provincial Health Services Authority (PHSA) which is responsible for selected province-wide healthcare programs and services.

Acute care facilities were defined as non-profit institutions that are designated as a hospital by the Minister and are operated primarily for the reception and treatment of persons:

- suffering from the acute phase of illness or disability;
- convalescing from or being rehabilitated after acute illness or injury; or
- requiring extended care at a higher level than that generally provided in a private hospital.

An administrative dataset of occupational health records, the Workplace Health Indicator Tracking and Evaluation (WHITE) database, was used to calculate vaccination coverage results. The WHITE data were an anonymized individual healthcare worker level dataset which included influenza vaccination status. One acute care facility in BC did not have data for its employees in WHITE and aggregate facility level immunization coverage data were reported from this facility.

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.

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 from aggregate facility level reporting of immunization coverage as of February 28th each year prior to the 2012/13 season to individual healthcare worker level reporting using WHITE data.

Results

Reporting of facilities (table 1)

- All 91 acute care facilities in BC are included in this report
- For 90/91 (99%) facilities, data from the WHITE database were used
- For 1/91 (1%) facility, aggregate facility level data were used because WHITE data were not available

2014/15 influenza vaccination coverage (tables 2 and 3; figures 1 to 5)

- 76% (51,580/67,580) of staff in acute care facilities in BC were vaccinated against influenza, an increase from 75% (50,878/67,459) coverage in 2013/14
- 70% to 80% coverage was the range across the six health authorities
- 67% to 85% coverage was the range across the sixteen health service delivery areas and PHSA
- 38% to 94% coverage was the range across all acute care facilities in BC
- 64% to 85% coverage was the range across the 31 facilities with 500 or more staff
- 87/91 (96%) facilities met the previous immunization coverage target of 60%

The total number of healthcare workers included in this acute care facility coverage report has fluctuated significantly over that past several years, but was very similar to the number included for last season: 58,212 healthcare workers in 2011/12, 48,818 in 2012/13, 67,459 in 2013/14, and 67,580 in 2014/15.

Summary

Influenza immunization coverage data were available for all 91 acute care facilities in BC. Influenza vaccination coverage for staff of acute care facilities in BC was 76%, which is below the target of 95% but above the previous target of at least 60% coverage.

Within most health authorities, there was a wide range of influenza vaccination coverage for acute care facilities. More variation in coverage was observed for smaller facilities (<500 staff). Coverage in large facilities (≥500 staff) ranged from 64 to 85%. The reasons behind the variation in vaccination coverage between facilities were not assessed.

The total number of healthcare workers included in the acute care facility coverage reports varied substantially for each of the 2011/12, 2012/13, and 2013/14 reports. The reasons for this variation are not clear and the changes in influenza immunization coverage in acute care facilities across seasons should be interpreted with caution as a result. The number of staff included in this year's report was very similar to the number included last year.

Influenza immunization coverage for healthcare workers in BC was similar for the 2012/13 (74%), 2013/14 (75%) and 2014/15 (76%) seasons. Coverage rates during these seasons were about 35% higher than prior to implementation of the BC Influenza Prevention Policy, but continued increases to achieve the target of 95% will require a substantial effort.

Tables and Figures

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

Health authority	Acute care facilities		
	Reported	Total	% reported
Interior	27	27	100
Fraser	13	13	100
Vancouver Coastal	14	14	100
Vancouver Island	13	13	100
Northern	18	18	100
Provincial Health Services	6	6	100
British Columbia	91	91	100

Table 2: Influenza vaccination coverage for staff of acute care facilities by health authority, health service delivery area, 2014/15

Health authority	Acute care facility staff		
	Immunized	Total	%
Interior	8,152	10,647	77
East Kootenay	780	953	82
Kootenay Boundary	928	1,197	78
Okanagan	3,886	5,283	74
Thompson/Cariboo/Shuswap	2,558	3,214	80
Fraser	15,399	19,262	80
Fraser East	2,859	3,635	79
Fraser North	5,790	7,167	81
Fraser South	6,750	8,460	80
Vancouver Coastal	12,274	16,312	75
Richmond	1,086	1,285	85
Vancouver	9,093	12,400	73
N Shore/Coast Garibaldi	2,095	2,627	80
Vancouver Island	7,811	11,119	70
South Vancouver Island	4,458	6,395	70
Central Vancouver Island	2,060	3,080	67
North Vancouver Island	1,293	1,644	79
Northern	3,012	4,007	75
Northwest	774	1,035	75
Northern Interior	1,695	2,228	76
Northeast	543	744	73
PHSA	4,932	6,233	79
BC	51,580	67,580	76

Table 3: Acute care facility staff influenza vaccination coverage by health authority, 2006/07 to 2014/15

Health authority	Influenza immunization coverage (%) for staff of acute care facilities by influenza season									
	2006/07	2007/08	2008/09	2009/10	2009/10 H1N1	2010/11	2011/12	2012/13	2013/14	2014/15
Interior	53	53	51	45	52	44	44	76	69	77
Fraser	40	40	33	16	46	30	34	74	80	80
Vancouver Coastal	46	39	45	47	53	46	43	71	75	75
Vancouver Island	45	42	41	37	42	39	42	74	73	70
Northern	40	45	43	37	41	42	37	76	73	75
PHSA	45	44	40	32	36	46	43	71	78	79
British Columbia	45	43	42	35	46	40	40	74	75	76

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

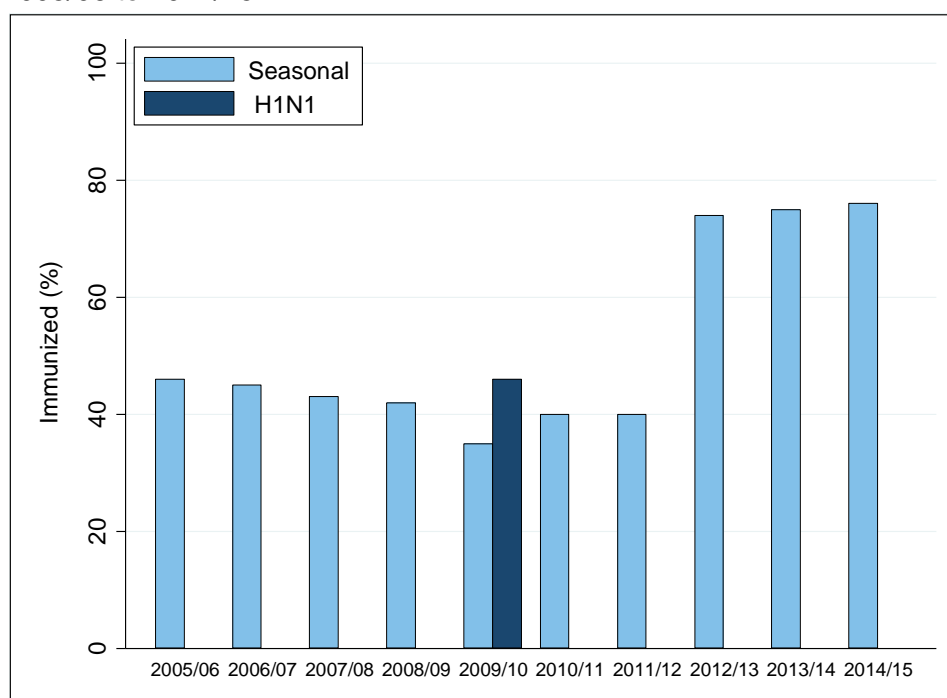


Figure 2: Influenza immunization coverage for staff of acute care facilities by health authority, 2014/15

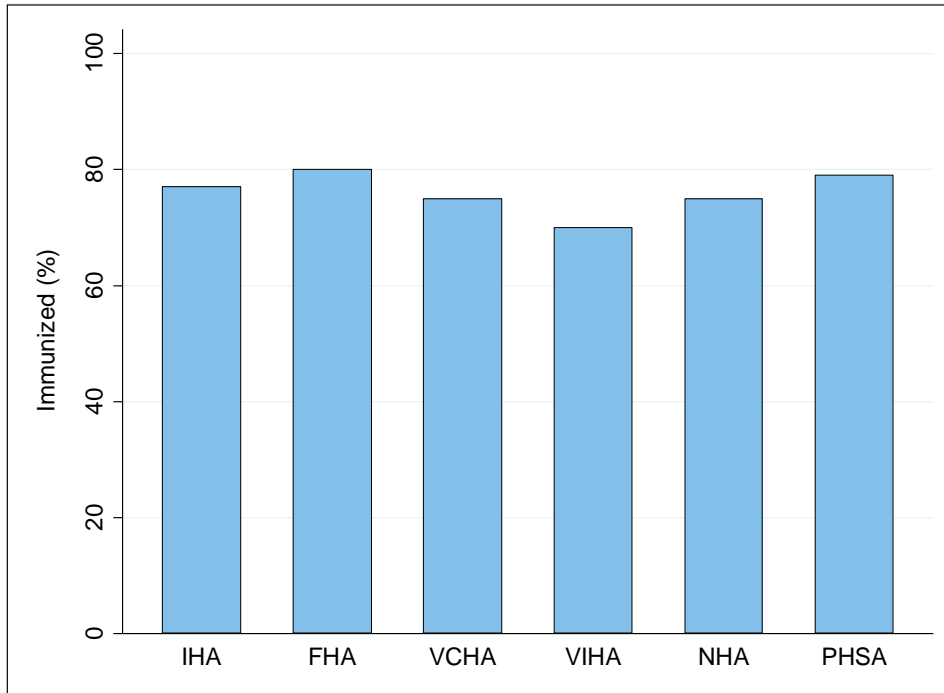


Figure 3: Influenza immunization coverage for staff of acute care facilities by health service delivery area and for PHSA, 2014/15

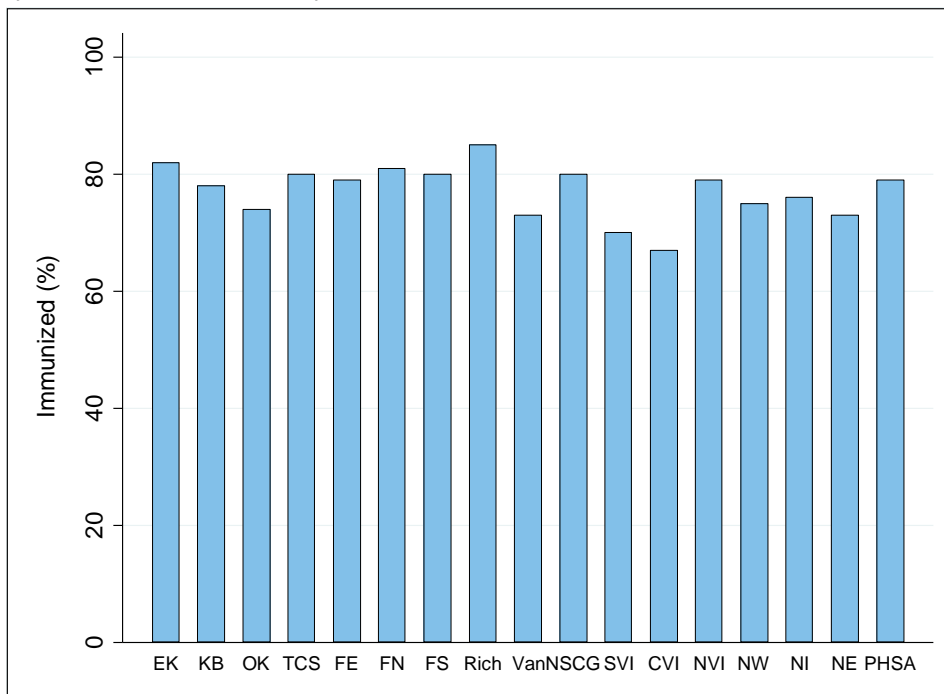


Figure 4: Influenza immunization coverage for staff of acute care facilities by facility size (number of staff), 2014/15

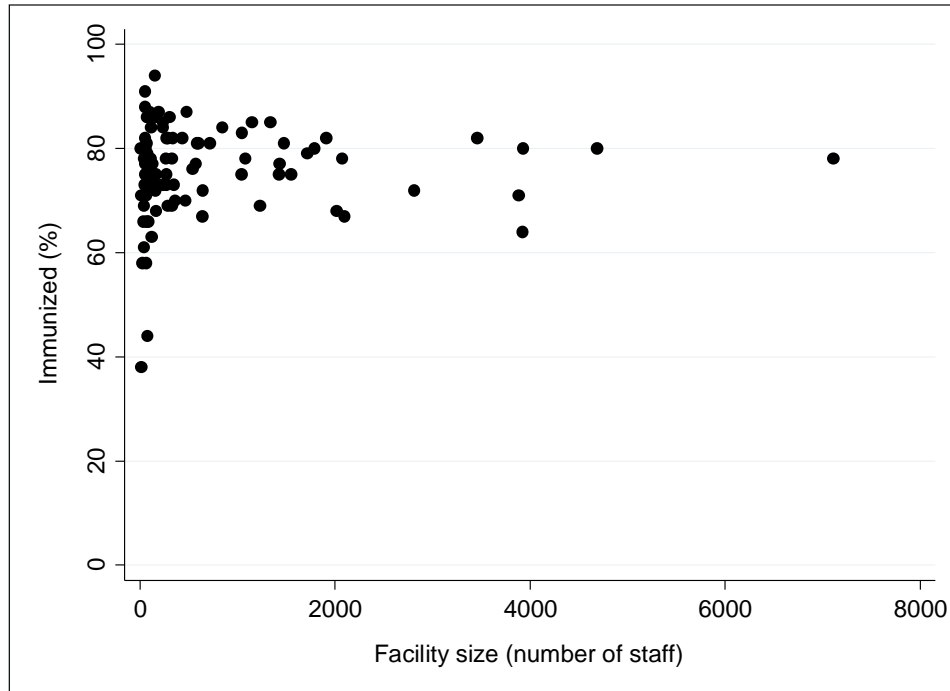


Figure 5: Influenza immunization coverage for staff of acute care facilities by facility within each health authority, 2014/15

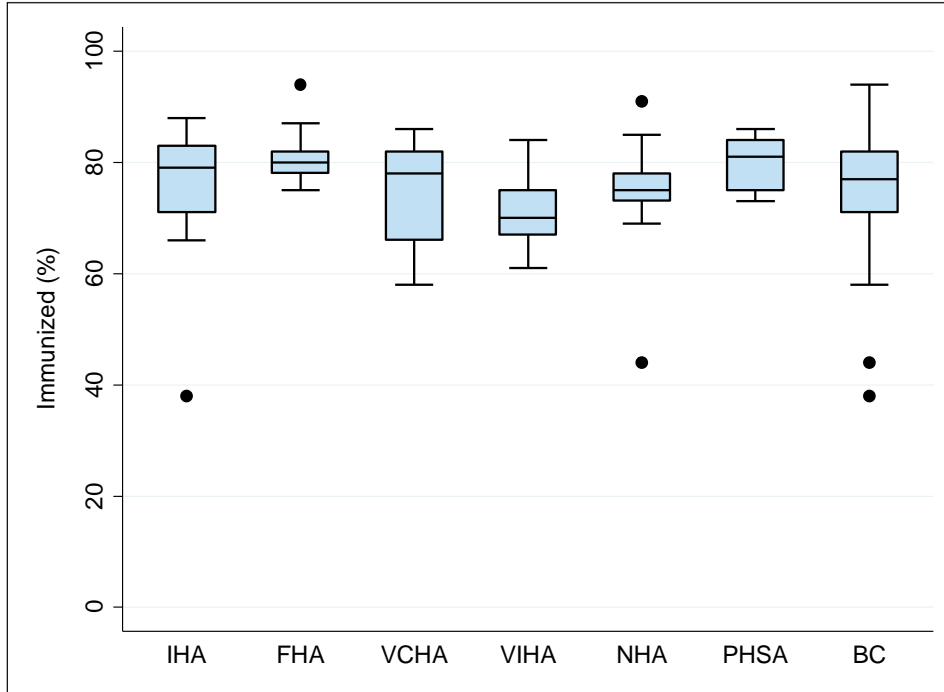


Figure 5 illustrates the range of influenza immunization coverage for acute care facilities within each health authority and for BC for the 2014/15 influenza season. The horizontal line below each box represents the lowest observed coverage value that is greater than or equal to the first quartile minus 1.5 times the interquartile range; the lower edge of each box represents the 25th percentile; the solid horizontal line within each box represents 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 low or high coverage values which may be outliers.

Table 4: Immunization coverage for staff of acute care facilities by health authority, health service delivery area, 2006/07 to 2014/15

		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	5,136	5,083	5,192	4,610	5,317	4,490	4,558	6,540	7,419	8,152
	total staff	9,602	9,545	10,213	10,249	10,307	10,132	10,473	8,593	10,726	10,647
	% immunized	53	53	51	45	52	44	44	76	69	77
East Kootenay	immunized	568	597	656	547	620	560	540	684	739	780
	total staff	1,082	858	1,067	1,038	999	1,033	1,031	812	970	953
	% immunized	52	70	61	53	62	54	52	84	76	82
Kootenay Boundary	immunized	616	592	605	504	497	422	381	706	817	928
	total staff	1,296	1,280	1,350	1,382	1,382	1,324	1,306	995	1,230	1,197
	% immunized	48	46	45	36	36	32	29	71	66	78
Okanagan	immunized	2,371	2,140	2,074	1,972	2,376	1,793	2,156	3,323	3,901	3,886
	total staff	4,371	4,539	4,631	4,652	4,600	4,635	5,412	4,593	5,845	5,283
	% immunized	54	47	45	42	52	39	40	72	67	74
Thomps Carib Shuswap	immunized	1,581	1,754	1,857	1,587	1,824	1,715	1,481	1,827	1,962	2,558
	total staff	2,853	2,868	3,165	3,177	3,326	3,140	2,724	2,193	2,681	3,214
	% immunized	55	61	59	50	55	55	54	83	73	80
FRASER	immunized	7,302	7,748	5,031	2,586	7,371	5,173	5,446	11,013	15,247	15,399
	total staff	18,037	19,180	15,154	15,867	15,867	16,984	15,881	14,883	19,001	19,262
	% immunized	40	40	33	16	46	30	34	74	80	80
Fraser East	immunized	1,354	1,619	912	520	1,318	1,033	1,219	2,053	2,761	2,859
	total staff	3,395	3,841	2,759	2,860	2,860	3,119	3,115	2,781	3,510	3,635
	% immunized	40	42	33	18	46	33	39	74	79	79
Fraser North	immunized	3,008	3,051	2,221	1,158	3,301	2,289	2,110	4,390	5,893	5,790
	total staff	7,181	7,405	6,496	6,612	6,612	7,003	6,228	5,825	7,301	7,167
	% immunized	42	41	34	18	50	33	34	75	81	81
Fraser South	immunized	2,940	3,078	1,898	908	2,752	1,851	2,117	4,570	6,593	6,750
	total staff	7,461	7,934	5,899	6,395	6,395	6,862	6,538	6,277	8,190	8,460
	% immunized	39	39	32	14	43	27	32	73	81	80

Table 4 (continued): Immunization coverage for staff of acute 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	8,160	6,236	7,152	6,841	7,639	5,644	5,541	5,553	12,060	12,274
	total staff	17,743	15,991	15,975	14,506	14,506	12,173	12,897	7,828	15,982	16,312
	% immunized	46	39	45	47	53	46	43	71	75	75
Richmond	immunized	522	496	648	634	716	516	520	792	1,055	1,086
	total staff	1,294	1,221	1,414	1,265	1,265	1,016	1,085	993	1,327	1,285
	% immunized	40	41	46	50	57	51	48	80	80	85
Vancouver	immunized	6,466	4,619	5,082	5,145	5,565	4,193	4,219	3,364	8,994	9,093
	total staff	13,596	12,037	11,540	10,600	10,600	9,026	9,805	4,996	12,003	12,400
	% immunized	48	38	44	49	53	46	43	67	75	73
N Shore/Coast Garibaldi	immunized	1,172	1,121	1,422	1,062	1,358	935	802	1,397	2,011	2,095
	total staff	2,853	2,733	3,021	2,641	2,641	2,131	2,007	1,839	2,652	2,627
	% immunized	41	41	47	40	51	44	40	76	76	80
VANCOUVER ISLAND	immunized	3,974	3,856	4,075	3,727	3,881	3,941	3,844	6,143	8,241	7,811
	total staff	8,782	9,113	9,981	10,175	9,183	10,021	9,166	8,345	11,360	11,119
	% immunized	45	42	41	37	42	39	42	74	73	70
South Van Island	immunized	2,041	2,110	2,130	1,987	2,389	2,035	1,944	3,975	4,722	4,458
	total staff	4,981	5,028	5,476	5,540	5,540	5,405	4,860	5,295	6,402	6,395
	% immunized	41	42	39	36	43	38	40	75	74	70
Central Van Island	immunized	1,064	1,078	1,173	982	1,163	1,184	1,139	1,673	2,070	2,060
	total staff	2,352	2,546	2,843	2,932	2,932	2,982	2,766	2,401	3,119	3,080
	% immunized	45	42	41	33	40	40	41	70	66	67
North Van Island	immunized	869	668	772	758	329	722	761	495	1,449	1,293
	total staff	1,449	1,539	1,662	1,703	711	1,634	1,540	649	1,839	1,644
	% immunized	60	43	46	45	46	44	49	76	79	79

Table 4 (continued): Immunization coverage for staff of acute care facilities by health authority, health service delivery area, 2006/07 to 2014/15

		Influenza season									
Health authority		2006/07	2007/08	2008/09	2009/10	2009/10 H1N1	2010/11	2011/12	2012/13	2013/14	2014/15
NORTHERN	immunized	1,950	2,018	1,972	1,558	1,737	1,832	1,623	2,612	2,913	3,012
	total staff	4,845	4,477	4,630	4,251	4,260	4,396	4,354	3,459	3,992	4,007
	% immunized	40	45	43	37	41	42	37	76	73	75
Northwest	immunized	555	525	486	372	478	498	548	673	732	774
	total staff	1,146	1,219	1,228	1,100	1,108	1,094	1,121	909	1,017	1,035
	% immunized	48	43	40	34	43	46	49	74	72	75
Northern Interior	immunized	1,021	1,110	1,105	875	966	997	785	1,473	1,661	1,695
	total staff	2,790	2,499	2,625	2,444	2,445	2,565	2,467	1,908	2,229	2,228
	% immunized	37	44	42	36	40	39	32	77	75	76
Northeast	immunized	374	383	381	311	293	337	290	466	520	543
	total staff	909	759	777	707	707	737	766	642	746	744
	% immunized	41	50	49	44	41	46	38	73	70	73
PHSA	immunized	3,269	3,353	2,785	2,753	3,093	2,015	2,363	4,038	4,998	4,932
	total staff	7,307	7,556	7,037	8,536	8,536	4,389	5,441	5,710	6,398	6,233
	% immunized	45	44	40	32	36	46	43	71	78	79
BC	immunized	29,791	28,294	26,207	22,075	29,038	23,095	23,375	35,899	50,878	51,580
	total staff	66,316	65,862	62,990	63,584	62,659	58,095	58,212	48,818	67,459	67,580
	% immunized	45	43	42	35	46	40	40	74	75	76