

Influenza vaccination coverage for staff of acute 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 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.

From the 2004/05 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 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 acute care facilities in British Columbia who were vaccinated against influenza during the 2013/14 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.

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 aggregate facility level data entered by health authority staff into a BC Centre for Disease Control (BCCDC) web application. Individual healthcare worker level WHITE data were used for all but one facility.

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, a particular healthcare worker was counted only once, and 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 from aggregate facility level reporting of status as of February 28th each year prior to the 2012/13 season to individual healthcare worker level reporting.

Results

Reporting of facilities (tables 1 and 2)

- 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, 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)

- 75% (50,878/67,459) of staff of acute care facilities in BC were vaccinated against influenza, an increase from 74% (35,889/48,818) coverage in 2012/13
- 69% to 80% coverage was the range across the six health authorities
- 66% to 81% coverage was the range across the sixteen health service delivery areas and PHSA
- 38% to 93% coverage was the range across all acute care facilities in BC
- 60% to 86% coverage was the range across the twenty-eight facilities with 500 or more staff
- 83/91 (91%) facilities met the 60% immunization coverage target

The total number of healthcare workers included in this acute care facility coverage report went from 58,212 for 2011/12, to 48,818 for 2012/13, to 67,459 for 2013/14.

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 75%. The stated goal of the current policy is 95% health care worker coverage; the previous had been 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 60 to 86%. The reasons behind the variation in vaccination coverage between facilities were not assessed.

The total number of healthcare workers included in this acute care facility coverage report has 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.

Influenza immunization coverage for healthcare workers in BC was similar for the 2012/13 (74%) and 2013/14 (75%) seasons. Coverage rates during these two seasons were about 35% higher than prior to implementation of the BC Influenza Prevention Policy, but the small change between 2012/13 and 2013/14 is an early indicator that 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, 2013/14

Health authority	Acute care facilities		% reported
	Reported	Total	
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: Data source used to calculate influenza vaccination coverage, 2013/14

Health authority	Acute care facilities	
	WHITE*	Aggregate*
Interior	27	0
Fraser	13	0
Vancouver Coastal	14	0
Vancouver Island	12	1
Northern	18	0
Provincial Health Services	6	0
British Columbia	91	1

* 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 acute care facilities by health authority and health service delivery area, 2013/14

Acute care facility staff			
Health authority	Immunized	Total	%
Interior	7,419	10,726	69
East Kootenay	739	970	76
Kootenay Boundary	817	1,230	66
Okanagan	3,901	5,845	67
Thompson/Cariboo/Shuswap	1,962	2,681	73
Fraser	15,247	19,001	80
Fraser East	2,761	3,510	79
Fraser North	5,893	7,301	81
Fraser South	6,593	8,190	81
Vancouver Coastal	12,060	15,982	75
Richmond	1,055	1,327	80
Vancouver	8,994	12,003	75
N Shore/Coast Garibaldi	2,011	2,652	76
Vancouver Island	8,241	11,360	73
South Vancouver Island	4,722	6,402	74
Central Vancouver Island	2,070	3,119	66
North Vancouver Island	1,449	1,839	79
Northern	2,913	3,992	73
Northwest	732	1,017	72
Northern Interior	1,661	2,229	75
Northeast	520	746	70
PHSA	4,998	6,398	78
BC	50,878	67,459	75

Table 4: Acute care facility staff influenza vaccination coverage by health authority, 2005/06 to 2013/14

Health authority	Influenza immunization coverage (%) for staff of acute care facilities by influenza season									
	2005/06	2006/07	2007/08	2008/09	2009/10	2009/10 H1N1	2010/11	2011/12	2012/13	2013/14
Interior	56	53	53	51	45	52	44	44	76	69
Fraser	42	40	40	33	16	46	30	34	74	80
Vancouver Coastal	45	46	39	45	47	53	46	43	71	75
Vancouver Island	45	45	42	41	37	42	39	42	74	73
Northern	47	40	45	43	37	41	42	37	76	73
PHSA	45	45	44	40	32	36	46	43	71	78
British Columbia	46	45	43	42	35	46	40	40	74	75

Figure 1: Influenza immunization coverage for staff of acute care facilities, 2004/05 to 2013/14

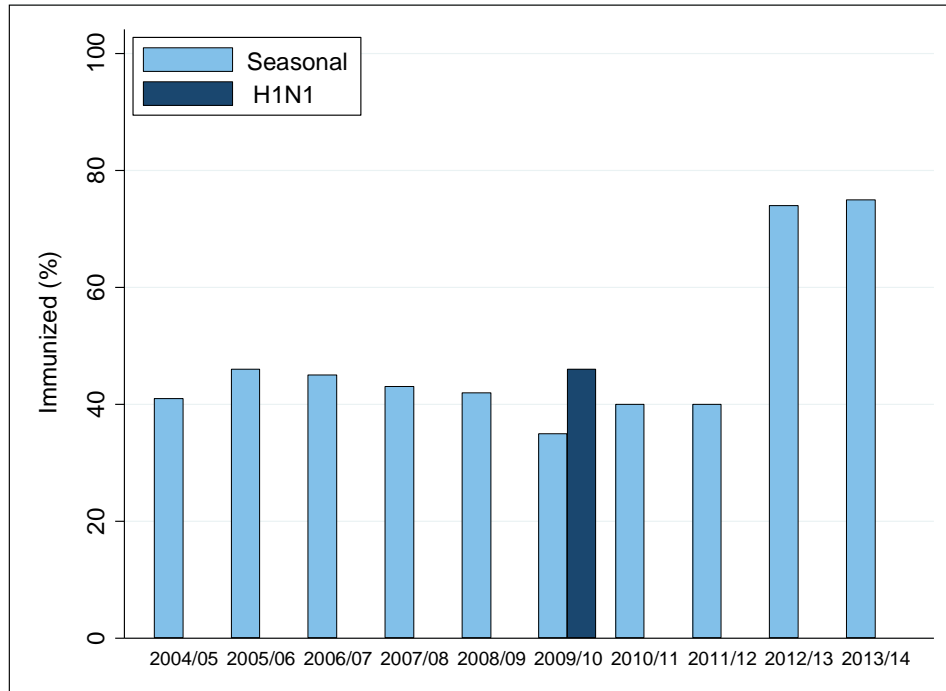


Figure 2: Influenza immunization coverage for staff of acute care facilities by health authority, 2013/14

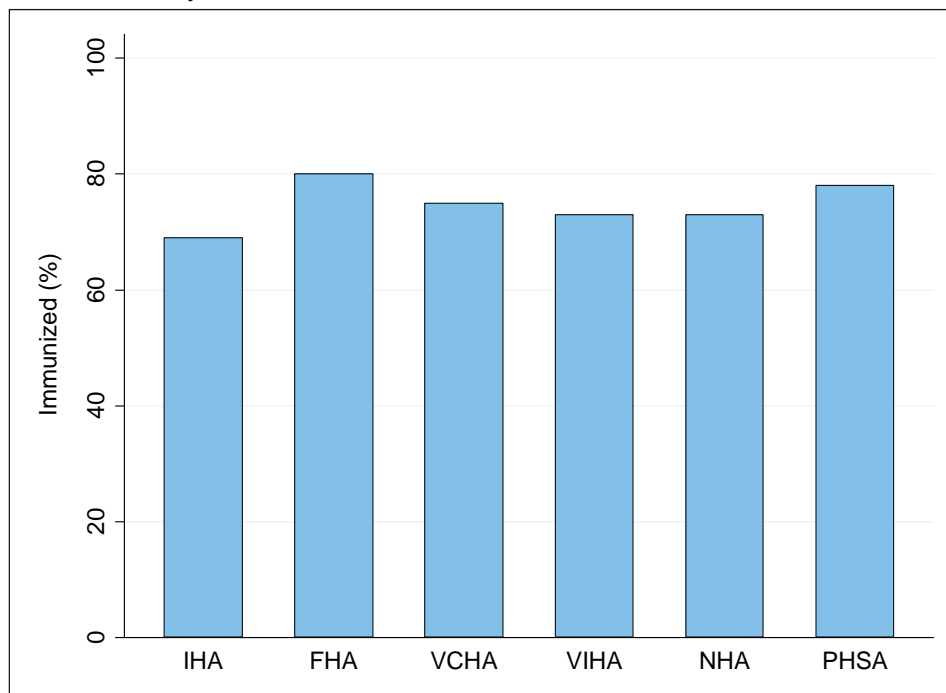


Figure 3: Influenza immunization coverage for staff of acute care facilities by health service delivery area and for PHSA, 2013/14

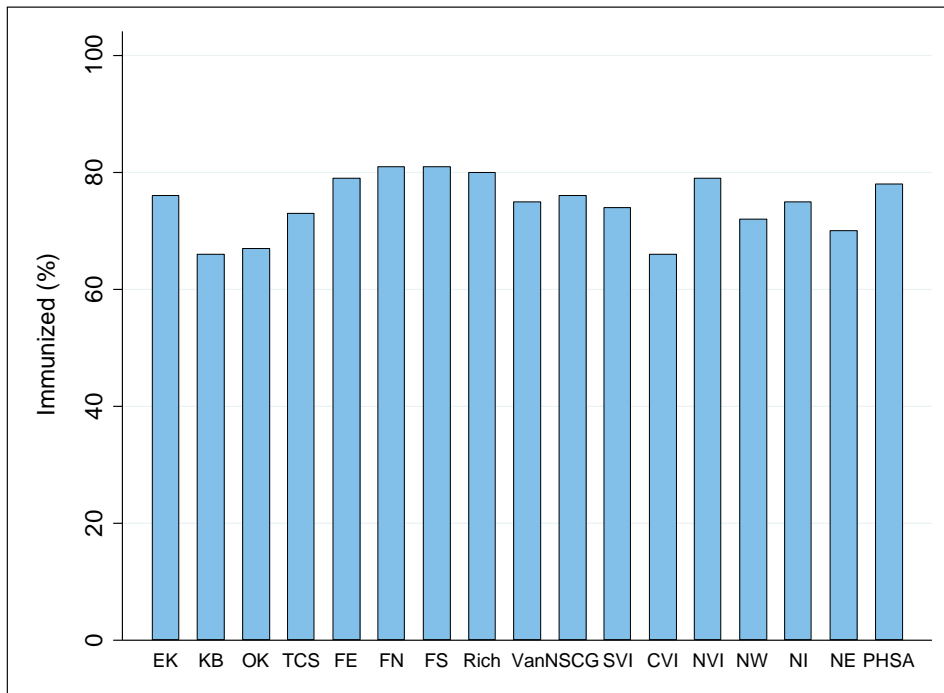


Figure 4: Influenza immunization coverage for staff of acute care facilities by facility size (number of staff), 2013/14

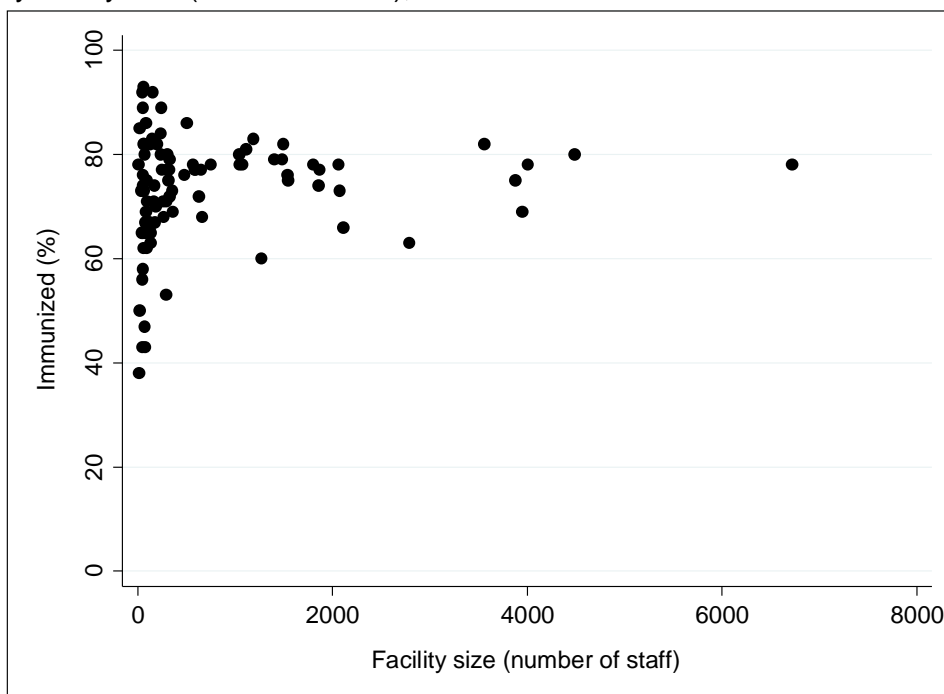


Figure 5: Influenza immunization coverage for staff of acute care facilities by facility within each health authority, 2013/14

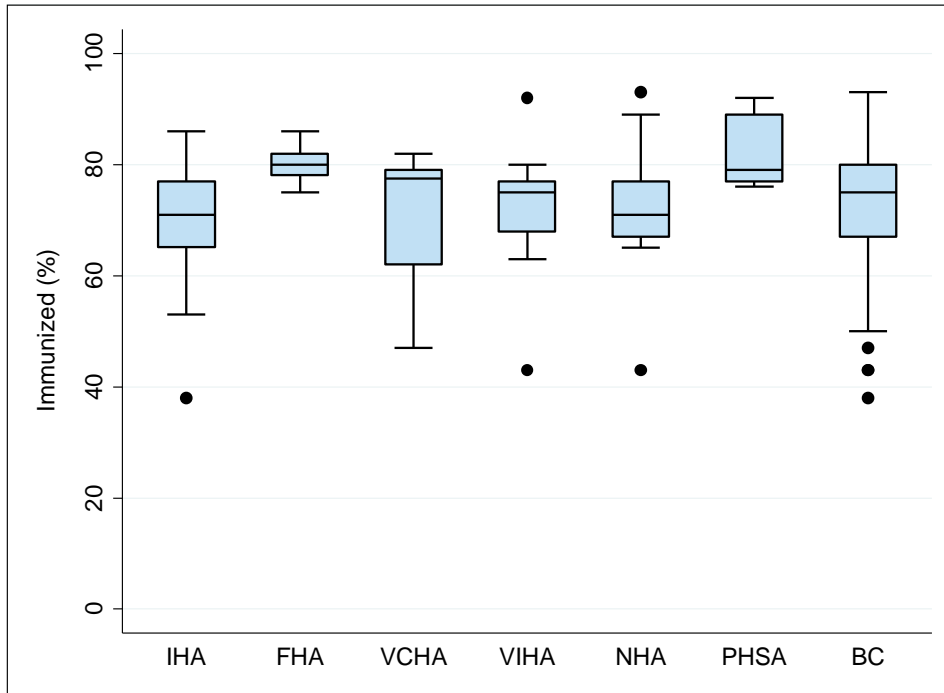


Figure 5 illustrates the range of influenza immunization coverage for acute care facilities within each health authority and for BC for the 2013/14 influenza season. The horizontal line below each box represents the lowest observed coverage value that is greater than or equal to the first quartile minus 1.5 times the interquartile range; the lower edge of each box represents the 25th percentile; the solid horizontal line within each box 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 5: Immunization coverage for staff of acute care facilities by health authority and health service delivery area, 2005/06 to 2013/14

		Influenza season									
		2005/06	2006/07	2007/08	2008/09	2009/10	2009/10 H1N1	2010/11	2011/12	2012/13	2013/14
Health authority											
INTERIOR	immunized	5,439	5,136	5,083	5,192	4,610	5,317	4,490	4,558	6,540	7,419
	total staff	9,751	9,602	9,545	10,213	10,249	10,307	10,132	10,473	8,593	10,726
	% immunized	56	53	53	51	45	52	44	44	76	69
East Kootenay	immunized	651	568	597	656	547	620	560	540	684	739
	total staff	996	1,082	858	1,067	1,038	999	1,033	1,031	812	970
	% immunized	65	52	70	61	53	62	54	52	84	76
Kootenay Boundary	immunized	653	616	592	605	504	497	422	381	706	817
	total staff	1,315	1,296	1,280	1,350	1,382	1,382	1,324	1,306	995	1,230
	% immunized	50	48	46	45	36	36	32	29	71	66
Okanagan	immunized	2,275	2,371	2,140	2,074	1,972	2,376	1,793	2,156	3,323	3,901
	total staff	4,567	4,371	4,539	4,631	4,652	4,600	4,635	5,412	4,593	5,845
	% immunized	50	54	47	45	42	52	39	40	72	67
Thomps Carib Shuswap	immunized	1,860	1,581	1,754	1,857	1,587	1,824	1,715	1,481	1,827	1,962
	total staff	2,873	2,853	2,868	3,165	3,177	3,326	3,140	2,724	2,193	2,681
	% immunized	65	55	61	59	50	55	55	54	83	73
FRASER	immunized	7,437	7,302	7,748	5,031	2,586	7,371	5,173	5,446	11,013	15,247
	total staff	17,602	18,037	19,180	15,154	15,867	15,867	16,984	15,881	14,883	19,001
	% immunized	42	40	40	33	16	46	30	34	74	80
Fraser East	immunized	1,443	1,354	1,619	912	520	1,318	1,033	1,219	2,053	2,761
	total staff	3,385	3,395	3,841	2,759	2,860	2,860	3,119	3,115	2,781	3,510
	% immunized	43	40	42	33	18	46	33	39	74	79
Fraser North	immunized	3,015	3,008	3,051	2,221	1,158	3,301	2,289	2,110	4,390	5,893
	total staff	6,943	7,181	7,405	6,496	6,612	6,612	7,003	6,228	5,825	7,301
	% immunized	43	42	41	34	18	50	33	34	75	81
Fraser South	immunized	2,979	2,940	3,078	1,898	908	2,752	1,851	2,117	4,570	6,593
	total staff	7,274	7,461	7,934	5,899	6,395	6,395	6,862	6,538	6,277	8,190
	% immunized	41	39	39	32	14	43	27	32	73	81

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

		Influenza season									
Health authority		2005/06	2006/07	2007/08	2008/09	2009/10	2009/10 H1N1	2010/11	2011/12	2012/13	2013/14
VANCOUVER COASTAL	immunized	6,981	8,160	6,236	7,152	6,841	7,639	5,644	5,541	5,553	12,060
	total staff	15,359	17,743	15,991	15,975	14,506	14,506	12,173	12,897	7,828	15,982
	(% immunized)	(45)	(46)	(39)	(45)	(47)	(53)	(46)	(43)	(71)	(75)
Richmond	immunized	462	522	496	648	634	716	516	520	792	1,055
	total staff	1,247	1,294	1,221	1,414	1,265	1,265	1,016	1,085	993	1,327
	(% immunized)	(37)	(40)	(41)	(46)	(50)	(57)	(51)	(48)	(80)	(80)
Vancouver	immunized	5,986	6,466	4,619	5,082	5,145	5,565	4,193	4,219	3,364	8,994
	total staff	13,178	13,596	12,037	11,540	10,600	10,600	9,026	9,805	4,996	12,003
	(% immunized)	(45)	(48)	(38)	(44)	(49)	(53)	(46)	(43)	(67)	(75)
N Shore/Coast Garibaldi	immunized	533	1,172	1,121	1,422	1,062	1,358	935	802	1,397	2,011
	total staff	934	2,853	2,733	3,021	2,641	2,641	2,131	2,007	1,839	2,652
	(% immunized)	(57)	(41)	(41)	(47)	(40)	(51)	(44)	(40)	(76)	(76)
VANCOUVER ISLAND	immunized	4,032	3,974	3,856	4,075	3,727	3,881	3,941	3,844	6,143	8,241
	total staff	8,977	8,782	9,113	9,981	10,175	9,183	10,021	9,166	8,345	11,360
	(% immunized)	(45)	(45)	(42)	(41)	(37)	(42)	(39)	(42)	(74)	(73)
South Van Island	immunized	2,189	2,041	2,110	2,130	1,987	2,389	2,035	1,944	3,975	4,722
	total staff	5,299	4,981	5,028	5,476	5,540	5,540	5,405	4,860	5,295	6,402
	(% immunized)	(41)	(41)	(42)	(39)	(36)	(43)	(38)	(40)	(75)	(74)
Central Van Island	immunized	1,150	1,064	1,078	1,173	982	1,163	1,184	1,139	1,673	2,070
	total staff	2,350	2,352	2,546	2,843	2,932	2,932	2,982	2,766	2,401	3,119
	(% immunized)	(49)	(45)	(42)	(41)	(33)	(40)	(40)	(41)	(70)	(66)
North Van Island	immunized	693	869	668	772	758	329	722	761	495	1,449
	total staff	1,328	1,449	1,539	1,662	1,703	711	1,634	1,540	649	1,839
	(% immunized)	(52)	(60)	(43)	(46)	(45)	(46)	(44)	(49)	(76)	(79)

Table 5 (continued): Immunization coverage for staff of acute 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	2,066	1,950	2,018	1,972	1,558	1,737	1,832	1,623	2,612	2,913
	total staff	4,414	4,845	4,477	4,630	4,251	4,260	4,396	4,354	3,459	3,992
	(% immunized)	(47)	(40)	(45)	(43)	(37)	(41)	(42)	(37)	(76)	(73)
Northwest	immunized	638	555	525	486	372	478	498	548	673	732
	total staff	1,256	1,146	1,219	1,228	1,100	1,108	1,094	1,121	909	1,017
	(% immunized)	(51)	(48)	(43)	(40)	(34)	(43)	(46)	(49)	(74)	(72)
Northern Interior	immunized	1,053	1,021	1,110	1,105	875	966	997	785	1,473	1,661
	total staff	2,338	2,790	2,499	2,625	2,444	2,445	2,565	2,467	1,908	2,229
	(% immunized)	(45)	(37)	(44)	(42)	(36)	(40)	(39)	(32)	(77)	(75)
Northeast	immunized	375	374	383	381	311	293	337	290	466	520
	total staff	820	909	759	777	707	707	737	766	642	746
	(% immunized)	(46)	(41)	(50)	(49)	(44)	(41)	(46)	(38)	(73)	(70)
PHSA	immunized	4,049	3,269	3,353	2,785	2,753	3,093	2,015	2,363	4,038	4,998
	total staff	8,954	7,307	7,556	7,037	8,536	8,536	4,389	5,441	5,710	6,398
	(% immunized)	(45)	(45)	(44)	(40)	(32)	(36)	(46)	(43)	(71)	(78)
BC	immunized	30,004	29,791	28,294	26,207	22,075	29,038	23,095	23,375	35,899	50,878
	total staff	65,057	66,316	65,862	62,990	63,584	62,659	58,095	58,212	48,818	67,459
	(% immunized)	(46)	(45)	(43)	(42)	(35)	(46)	(40)	(40)	(74)	(75)