



Department of Health Promotion and Protection

# **I N F L U E N Z A**

**Surveillance Report  
2008–2009**

## Table of Contents

---

<b>Introduction</b> .....	<b>1</b>
<b>Methods</b> .....	<b>1</b>
<b>Limitations</b> .....	<b>2</b>
Influenza and influenza-like illness (ILI).....	3
<b>2008–2009 Seasonal Influenza Vaccine Program</b> .....	<b>8</b>
Seasonal Influenza Vaccine Coverage Estimates .....	8
Children 6 to 23 Months of Age .....	8
Adults 65 Years of Age and Older .....	9
Residents of Long-Term Care Facilities.....	10
Health Care Workers.....	11
Influenza Vaccination Trends in Nova Scotia, 1999-2009 .....	12
Adverse Events Following Immunization (AEFI) .....	12
<b>Conclusion</b> .....	<b>13</b>
<b>References</b> .....	<b>13</b>

## List of Tables and Figures

- Figure 1: Number of laboratory-confirmed cases of influenza by type and surveillance week, Nova Scotia, 2008–2009
- Figure 2: Influenza rate per 100,000 population by type and DHA, Nova Scotia, 2008–2009
- Figure 3: Influenza rate per 100,000 population by type and age group, Nova Scotia, 2008–2009
- Figure 4: Percent of laboratory-confirmed 2009 pH1N1 cases hospitalized by age group, Nova Scotia, 2008–2009
- Figure 5: Percentage of ER and sentinel visits with ILI, Nova Scotia, 2008-2009
- Figure 6: Outbreaks of influenza and ILI by report week and setting, Nova Scotia, 2008–2009 influenza season
- Figure 7: Seasonal influenza vaccination trends in Nova Scotia, 1999–2009
- 
- Table 1: Select influenza case demographics, Nova Scotia, 2008–2009
- Table 2: Influenza vaccine coverage rates (including MSI billing) for children 6 to 23 months of age, Nova Scotia, 2004 – 2009
- Table 3: Influenza vaccine coverage rates (including MSI billing) for children 6 to 23 months of age, Nova Scotia, by DHA, 2008 – 2009
- Table 4: Influenza vaccine coverage rates for community residents 65 years of age and older, Nova Scotia, 1999 – 2009
- Table 5: Influenza vaccine coverage rates for community residents 65 years of age and older, Nova Scotia, by DHA, 2008 – 2009
- Table 6: Influenza vaccine coverage rates for residents of long-term care facilities, Nova Scotia, 1998-2009
- Table 7: Influenza vaccine coverage rates for residents of long-term care facilities, Nova Scotia, by DHA, 2008 – 2009
- Table 8: Percentage of health care workers vaccinated for influenza (direct care and support staff), by setting, 2003 – 2009
- Table 9: Influenza immunization coverage rates for health care workers (direct care and support staff), by setting and DHA, 2008 – 2009

---

## Introduction

Influenza is an illness of the respiratory tract caused by influenza A and B viruses, characterized by the acute onset of fever, headache, myalgia, prostration, sore throat and cough. Influenza derives its public health importance from the epidemic potential of the virus and the associated morbidity and seriousness of complications.

The 2008–2009 influenza season was marked by the introduction of a novel influenza virus, influenza A 2009 H1N1 (hereafter referred to in this document as pH1N1). The pH1N1 virus was first identified in Mexico in March, 2009. The first cases were identified in Nova Scotia in April, 2009. The virus quickly spread throughout the globe and was declared a pandemic by the World Health Organization (WHO) on June 11, 2009.

Immunization is widely recognized as the most effective means to reduce the morbidity and mortality associated with influenza. Each year in Canada, the National Advisory Committee on Immunization (NACI) publishes a statement with recommendations as to the groups that should be targeted by seasonal immunization programs. The Nova Scotia Department of Health Promotion and Protection makes available free vaccine to individuals belonging to these groups. In 2008–2009, these groups included:

- Persons at high-risk of influenza-related complications
- Persons capable of transmitting influenza to those at high-risk of complications
- Others (including persons performing essential community services and persons in direct contact with culling operations with poultry infected with avian influenza)

This report will review the epidemiology of laboratory-confirmed influenza for the 2008–2009 season. As well, it will review seasonal influenza vaccine coverage rates for select groups, including children aged 6 months to 23 years, adults aged 65 years and older, residents of long-term care facilities and health care workers. It is of note that pH1N1 vaccine was not available during the 2008–2009 influenza season, and as such is not addressed in this report.

## Methods

The 2008–2009 influenza season was defined using the Public Health Agency of Canada (PHAC) influenza surveillance weeks; it began August 24 2008 and ended August 29, 2009. Influenza is a notifiable disease in Nova Scotia under the Health Protection Act. Influenza case data were obtained from Respiratory Watch files and from the Application for Notifiable Disease Surveillance (ANDS), the electronic system used to report notifiable data in Nova Scotia.

In response to the first wave of pH1N1 influenza, an Emergency Room (ER) surveillance system was implemented in April 2009. Emergency departments in 41 hospitals across Nova Scotia began monitoring for trends of influenza-like illness in the community in order to determine disease activity levels and to detect waning and re-emergence, and severity of illness. Infection control practitioners completed a one page aggregate report form for the total number of patients seen in ER and the total number meeting the ILI case definition.

During the pH1N1 outbreak, there were two sentinel physician networks in the province; 1/ those physicians recruited by the College of Physicians and Surgeons of Canada who reported directly to FluWatch, a PHAC initiative, and 2/ a network of provincial sentinel physicians who

report directly to NSHPP. The FluWatch network of sentinel physicians has been in place since 1996, while the provincial sentinel network was established in the summer of 2009 as an enhancement to the FluWatch sentinel network. Both sentinel networks reported on a specified day each week, the number of patient visits due to ILI and the total number of patients seen, by age group. Provincial sentinels were further requested to obtain nasopharyngeal (NP) swabs from the first two patients presenting with ILI on their reporting day each week for surveillance purposes.

Immunization coverage rates were determined by calculating the number of individuals who received the vaccine as a proportion of the total number of individuals eligible to receive the vaccine. Denominator data for each of the eligible groups at risk were obtained from projected population estimates from the 2006 Canadian census, as well as from acute and long-term care facilities.

The number of individuals who received influenza vaccine was available from the provincial Medical Services Insurance (MSI) physician-billing database. District public health offices and other community agencies (e.g., Victorian Order of Nurses (VON)) provided the total number of persons immunized in the community, categorized by the risk group to which they belong. Finally, acute and long-term care facilities provided the total number of staff who received influenza vaccine through their occupational health programs, as well as the total number of residents and/or patients immunized.

Population data for 2009 were based on projections from 2006 Canadian census data. Population estimates for specific groups were calculated as follows:

- Children 6 to 23 months of age
  - Populations were estimated using single year of age projection data from 2006 census data. All children aged one year were included, as were half of those less than one year of age.
- Adults 65 years and older (community living seniors)
  - Populations were estimated using single year of age projection data from 2006 census data. All adults 65 years of age and older were included. Numbers of residents living in long-term care facilities, as provided by the DHAs, were subtracted from the total population estimate.
- Health care workers
  - Population estimates were provided by acute and long-term care facilities to Public Health Services, who in turn report these numbers to NS HPP

## **Limitations**

A number of limitations should be considered when interpreting the vaccination coverage rates presented in this report. Population estimates prior to 2003 were based on mid-year population projections from the 1996 Canadian census. Population data from 2003 to 2008 were based on the 2001 census, consistent with the methodology used in other reports published by this department. Comparison of age-specific coverage rates with previous seasons must therefore be interpreted carefully.

Other limitations include the completeness of reporting and relate to data collection. With the exception of the computerized MSI physician-billing database, surveillance data were collected

in a paper-based format from the sources described above. Home care data reported in CDHA was aggregate and did not provide age. As such, vaccine coverage estimates in certain categories (notably adults 65 years of age and older) may be underestimated. There were several thousand people in this group who could not be classified according to age.

The number of health care workers represented in this report is not indicative of the number present in the province. District Health Authorities report to HPP the number of health care workers in long-term care and acute care facilities, which are used to calculate coverage rates. There are no estimates available for the number of health care workers in the province; therefore the District Health Authority must report their vaccine summary data, in order for the rates in this group to be calculated.

Risk group information, largely self-reported, was collected at the individual level and then summarized and reported as aggregate data.

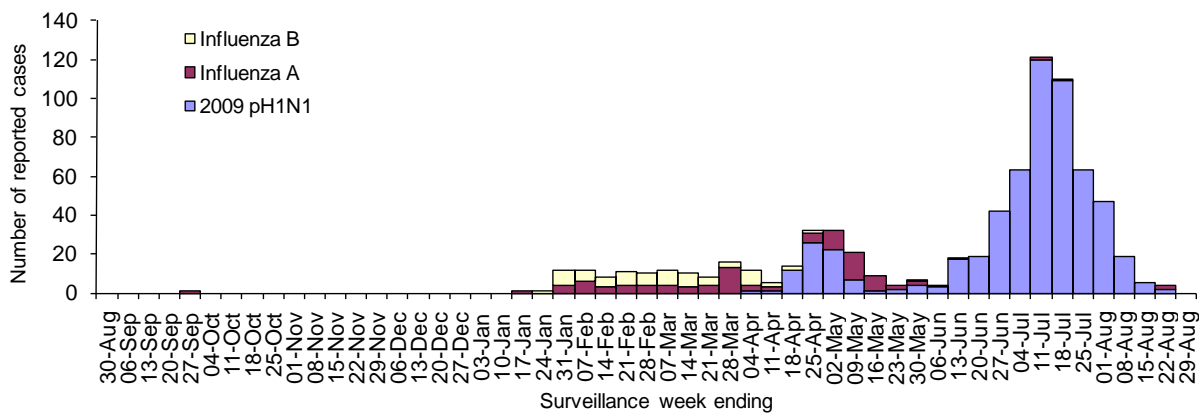
There is also the potential for duplicate reporting and/or misclassification. For example, a health care worker who received vaccine from a physician would be captured in the MSI database and would also be reported by the facility in which the individual was employed.

Additional limitations are specifically addressed within the specific population groups.

### Influenza and influenza-like illness (ILI)

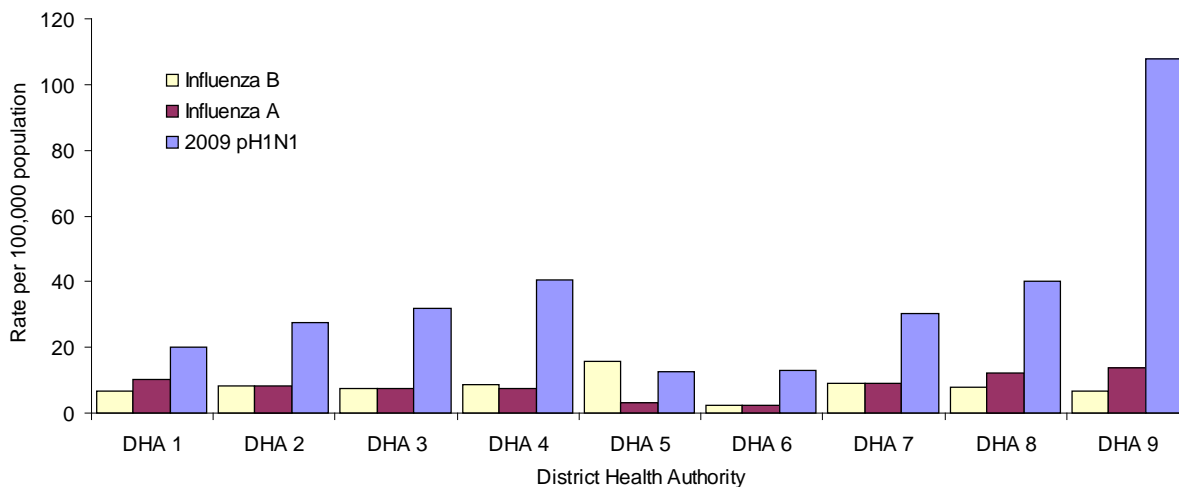
Influenza A and influenza B both circulated in Nova Scotia during the 2008–2009 season. The season also saw the introduction of a novel strain of influenza, 2009 pH1N1. The number of laboratory-confirmed cases of each type is shown in Figure 1. The predominant strain circulating in the province was 2009 pH1N1, accounting for 78% of all laboratory-confirmed cases during the 2008–2009 influenza season.

**Figure 1: Number of laboratory-confirmed cases of influenza by type and surveillance week, Nova Scotia, 2008–2009**



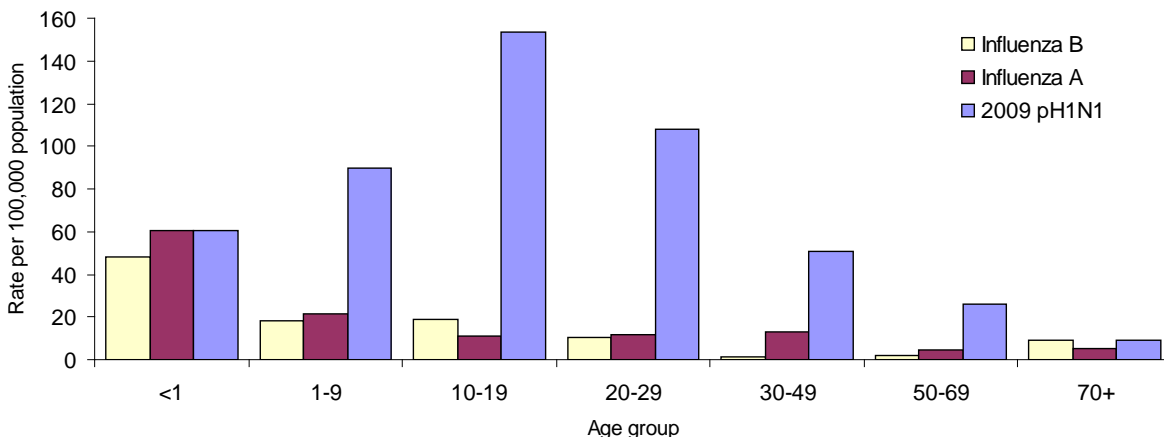
Influenza was reported from all District Health Authorities during the 2008–2009 season. As shown in Figure 2, influenza A and B had relatively similar rates per 100,000 population across all DHAs. The predominant strain in the majority of DHAs was 2009 pH1N1, except, DHA 5 had highest rates of influenza B.

**Figure 2: Influenza rate per 100,000 population by type and DHA, Nova Scotia, 2008–2009**



Influenza was detected across all age groups (Figure 3) during the 2008–2009 season. Infants and those 70 years of age and older were affected approximately equally by the three circulating strains. However, younger age groups (10-29 yrs) were disproportionately affected by 2009 pH1N1. Older age groups were the least affected by 2009 pH1N1, with those above 70 years of age having the lowest rate of infection.

**Figure 3: Influenza rate per 100,000 population by type and age group, Nova Scotia, 2008–2009**



During the 2008–2009 influenza season, 585 cases of pH1N1 were reported in Nova Scotia (Table 1). Typically, case follow-up is not conducted on laboratory-confirmed influenza cases in the province. However, during this particular season, the novel influenza virus cases were contacted by Public Health Services and additional information is available for these cases.

Information pertaining to underlying medical conditions was obtained on 379 of 585 (65%) laboratory-confirmed 2009 pH1N1 cases. Pregnancy status was known for 481 of the 2009 pH1N1 cases; nine (2%) of the cases were pregnant. One hundred and twelve (30%) of these cases reported the presence of an underlying medical condition. Fifteen cases (4%) reported diabetes, 12 cases (3%) reported lung disease, seven cases (2%) reported chronic heart disease, five (1%) reported to be immunocompromised, and one case (0.3%) reported kidney

disease. Seventy-three cases (19%) reported another underlying medical condition not specified in the categories above. Three hundred and eighty individuals responded to the question of seasonal influenza vaccination status; 137 (36%) reported receiving seasonal influenza vaccine, 193 (51%) did not receive the vaccine, 50 (13%) did not know if they had received the vaccine.

**Table 1: Select influenza case demographics, Nova Scotia, 2008–2009**

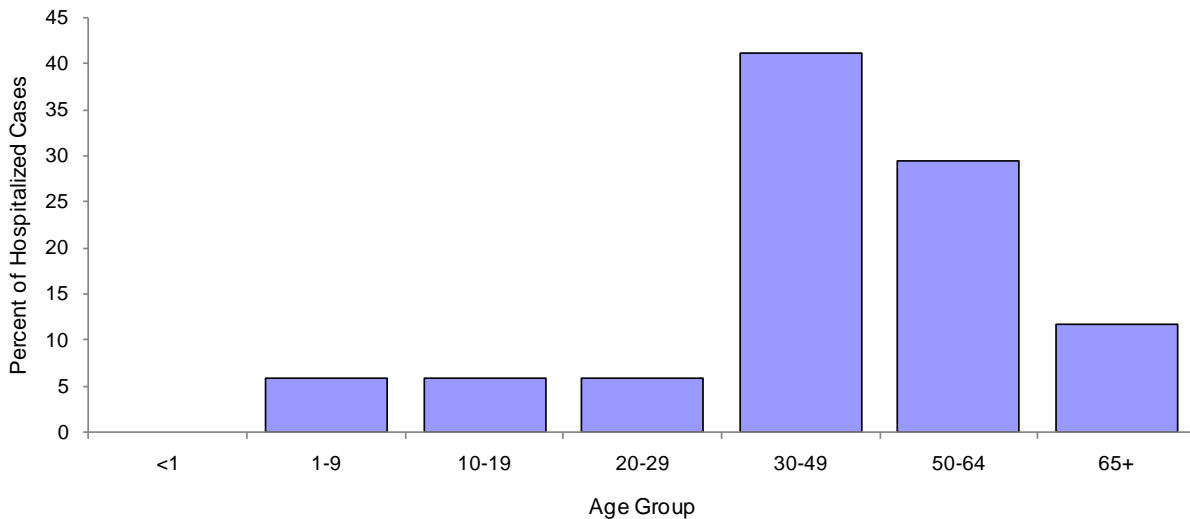
	n	Rate (CI)*	% Male	Mean age	Median age	Age range
<b>2009 pH1N1</b>						
Cases	585	62.7 (57.6–67.8)	41.9	26.6	22.0	10 mos–86 yrs
Total hospitalizations	17	1.8 (0.9–2.7)	23.5	44.6	47.2	4–86 yrs
Non-ICU	9	0.9 (0.3–1.6)	33.3	43.7	48.7	4–71 yrs
ICU	8	0.8 (0.3–1.5)	12.5	45.6	37.2	25–86 yrs
Deaths	1	0.1 (-0.1–0.3)	0.0	51.0	51.0	51 yrs
<b>Influenza A</b>						
Cases	99	10.6 (8.5–12.7)	49.5	30.2	30.0	11 mos–89 yrs
Total hospitalizations	0	–	–	–	–	–
Non-ICU	0	–	–	–	–	–
ICU	0	–	–	–	–	–
Deaths	0	–	–	–	–	–
<b>Influenza B</b>						
Cases	69	7.4 (5.7–9.1)	30.4	28.1	18.0	2 wks–103 yrs
Total hospitalizations	0	–	–	–	–	–
Non-ICU	0	–	–	–	–	–
ICU	0	–	–	–	–	–
Deaths	0	–	–	–	–	–

\*CI = confidence interval for rate

Seventeen of the 585 reported cases (3%) of 2009 pH1N1 were hospitalized (Table 1). The mean and median age of hospitalized cases was 44.6 years and 47.2 years respectively. The percentage of hospitalized cases in each age group is shown in Figure 4. The largest number of hospitalizations was found between 30 and 49 years of age (41%). Approximately 70% of hospitalized cases reported an underlying medical condition, including two (12%) pregnant females. The most commonly reported underlying conditions among hospitalized cases were diabetes and pulmonary disease other than asthma.

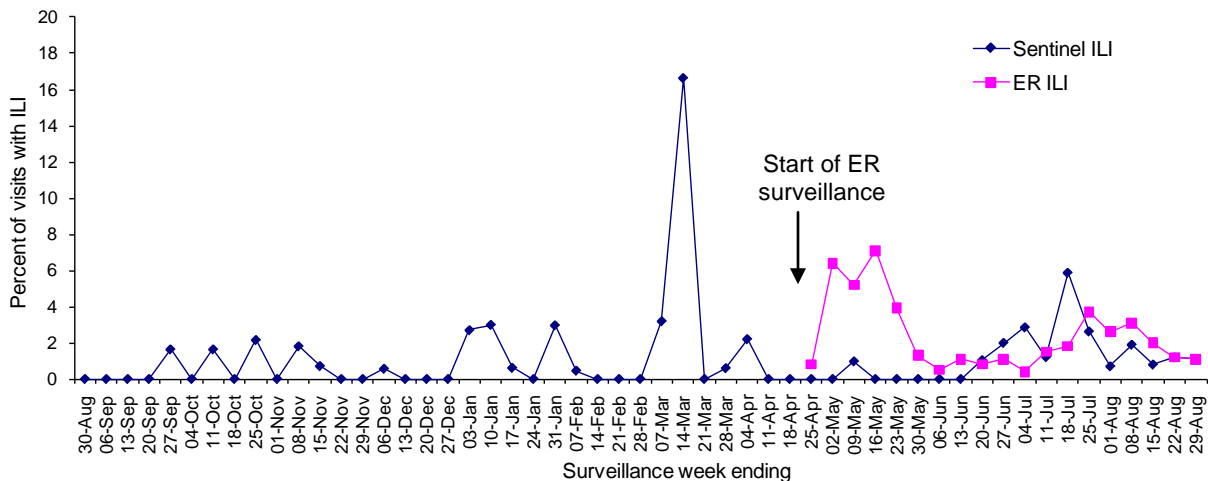
Eight cases were admitted to the intensive care unit (ICU), five of these (63%) required mechanical ventilation. Mean age of ICU cases was 45.6 years (median age 37.2 years, range 25.8 to 86.1 years). Data on length of stay in ICU or hospital are not available. One case with underlying medical conditions died eighteen days after admission to hospital.

**Figure 4: Percent of laboratory-confirmed 2009 pH1N1 cases hospitalized by age group, Nova Scotia, 2008–2009**



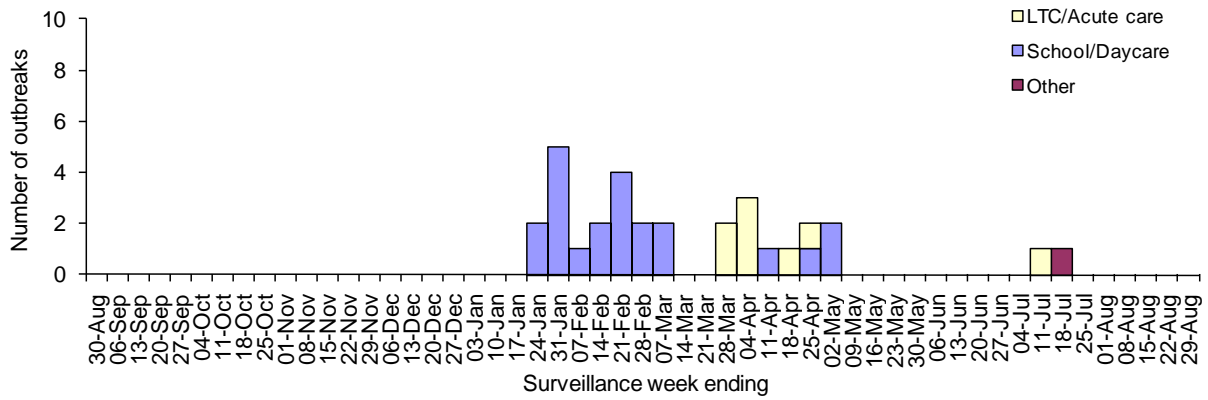
The proportion of patient visits with influenza-like illness monitored at emergency rooms and sentinel practices across the province are presented in Figure 5. Following the declaration of an outbreak of influenza pH1N1 at a boarding school in Nova Scotia, ILI surveillance implemented at emergency rooms across the province detected an increase in ILI presentations throughout the month of May. Sentinel ILI activity was consistent throughout the season with a increase in activity the week of March 14<sup>th</sup>. This however is more likely to be associated with variation in reporting practices than with actual activity.

**Figure 5: Percentage of ER and sentinel visits with ILI, Nova Scotia, 2008–2009**



Thirty-one respiratory-related outbreaks were reported during the 2008–2009 influenza season. Twenty-two outbreaks were influenza-like illness in schools, and eight occurred in a long term care/acute care setting; six of these were laboratory-confirmed influenza. Outbreaks by week of report and setting are shown in Figure 6.

**Figure 6: Outbreaks of influenza and ILI by report week and setting, Nova Scotia, 2008–2009 influenza season**



## 2008–2009 Seasonal Influenza Vaccine Program

In the fall of each year, HPP provides a supply of vaccine to the district Public Health Services offices that in turn distribute the vaccine to physicians and other health care organizations responsible for vaccine administration.

A total of 350,000 doses of influenza vaccine were purchased by Nova Scotia HPP for the 2008–2009 influenza season. Of these, 348,200 were distributed to Public Health Services (PHS) in the District Health Authorities.

PHS distributed a total of 340,760 doses (97.9%) of influenza vaccine to vaccine providers. Of the undistributed doses, some were unused (0.7%), some were wasted, for example through a cold chain failure (1.1%) and some expired (0.3%).

### Seasonal Influenza Vaccine Coverage Estimates

#### Children 6 to 23 Months of Age

The 2008–2009 influenza season marked the fifth year that children aged 6 to 23 months were eligible to receive publicly-funded influenza vaccine. As the majority of this age group is vaccinated by primary health care providers, the number of children immunized was obtained primarily from the MSI physician-billing database. A small proportion of this age group was vaccinated by public health.

Children less than nine years of age receiving seasonal influenza vaccine for the first time require two doses administered at least four weeks apart. Due to limitations in data extraction, it is difficult to determine the number of doses administered to a specific individual. As a result, the numbers presented in this age group may overestimate vaccine coverage rates.

Coverage rates for children aged 6 to 23 months for the past five influenza seasons are presented in Table 2. The available data indicates that the coverage rate for the 2008–2009 influenza season was the highest since the introduction of the publicly funded vaccine.

**Table 2: Influenza vaccine coverage rates (including MSI billing) for children 6 to 23 months of age, Nova Scotia, 2004–2009**

Year	Population aged 6 – 23 months	Vaccinated by physicians		Vaccinated by public health/other		Total vaccinated	
		n	%	n	%	n	%
2008–2009	12459	6237	50.1	158	1.3	6395	51.3
2007–2008	12483	5436	43.5	193	1.5	5629	45.1
2006–2007	12636	4268	33.8	219	1.7	4487	35.5
2005–2006	12660	4709	37.2	250	2.0	4959	39.2
2004–2005	12786	5164	40.4	292	2.3	5456	42.7

Approximately 51% of children aged 6 to 23 months were vaccinated during the 2008–2009 influenza season. The majority (98%) of these children were vaccinated by primary care physicians (Table 3). The percent of children vaccinated ranged from 14% (DHA 5) to 68% (DHA 9).

**Table 3: Influenza vaccine coverage rates (including MSI billing) for children 6 to 23 months of age by DHA, Nova Scotia, 2008–2009**

DHA	Population aged 6 – 23 months	Vaccinated by physicians		Vaccinated by public health/other		Total vaccinated	
		n	%	n	%	n	%
1	609	279	45.8	21	3.4	300	49.3
2	775	155	20.0	11	1.4	166	21.4
3	1028	461	44.8	n/a*	–	461	44.8
4	1177	610	51.8	17	1.4	627	53.3
5	334	39	11.7	8	2.4	47	14.1
6	656	178	27.1	17	2.6	195	29.7
7	665	108	16.2	27	4.1	135	20.3
8	1471	532	36.2	52	3.5	584	39.7
9	5744	3875	67.5	5	0.1	3880	67.5
Nova Scotia	12459	6237	50.1	158	1.3	6395	51.3

\*Data not reported by the DHA.

#### *Adults 65 Years of Age and Older*

This group includes adults 65 years of age and older who are not residents of a long-term care facility (i.e., community-living seniors). Immunization data were obtained from both the MSI physician billing database and from public health and other community agencies (e.g. VON).

The national target for vaccine coverage in adults 65 years of age and older is 80%. Nova Scotia data indicate that this target has not been met in any influenza season (Table 4). The coverage rate for the 2008–2009 influenza season was 64%.

**Table 4: Influenza vaccine coverage rates for community residents 65 years of age and older, Nova Scotia, 1999 – 2009**

Year	Total Population Aged 65+*	Vaccinated by physicians		Vaccinated by public health/other		Total vaccinated	
		n	%	n	%	n	%
2008–2009	139384	81256	58.3	8331	6.0	89587	64.3
2007–2008	131367	73428	55.9	10227	7.8	83655	63.7
2006–2007	131132	77928	59.4	8736	6.7	86664	66.1
2005–2006	126409	79052	62.5	9737	7.7	88789	70.2
2004–2005	124834	78063	62.5	9829	7.9	87892	70.4
2003–2004	119017	75942	63.8	9434	7.9	85376	71.7
2002–2003	121934	71070	58.3	7793	6.4	78863	64.7
2001–2002	120104	70892	59.0	11460	9.5	82352	68.6
2000–2001	119866	66638	55.6	7974	6.7	74612	62.2
1999–2000	117358	61829	52.7	12111	10.3	73940	63.0

\*Excludes residents of LTCF.

Vaccine coverage estimates in adults 65 years and older in each DHA (Table 5) ranged from 39% (DHA 7) to 74% (DHA 8). As mentioned in the limitations, the number of individuals vaccinated by public health/other in this age group may be underestimated, as home care data reported to CDHA did not provide age of the client.

**Table 5: Influenza vaccine coverage rates for community residents 65 years of age and older by DHA, Nova Scotia, 2008–2009**

DHA	DHA Population Aged 65+*	Vaccinated by physicians		Vaccinated by public health/other		Total vaccinated	
		n	%	n	%	n	%
1	11162	6579	58.9	552	4.9	7131	63.9
2	10560	5560	52.7	1175	11.1	6735	63.8
3	14027	9395	67.0	0	0	9395	67.0
4	14033	6225	44.4	1373	9.8	7598	54.1
5	8553	2639	30.9	1147	13.4	3786	44.3
6	7161	3336	46.6	1373	19.2	4709	65.8
7	9848	3384	34.4	470	4.8	3854	39.1
8	18390	11387	61.9	2222	12.1	13609	74.0
9	45650	32751	71.7	19	0.04	32770	71.8
Nova Scotia	139384	81256	58.3	8331	6.0	89587	64.3

\*Excludes residents of LTCF.

#### Residents of Long-Term Care Facilities

Long-term care facilities (LTCF) in Nova Scotia report the total number of individuals living in the institution, and the number of these residents who received the influenza vaccine. The national target for influenza vaccine coverage in residents of LTCF is 95%.

Vaccine coverage rates in Nova Scotia have been above 90% since 1999, however, the target of 95% has not been met in the province (Table 6). Data for the 2008–2009 influenza season indicate that the coverage rate was the lowest recorded since the 2000–2001 influenza season.

**Table 6: Influenza vaccine coverage rates for residents of long term care facilities, Nova Scotia, 1999–2009**

Year	08–09	07–08	06–07	05–06	04–05	03–04	02–03	01–02	00–01	99–00
Percent Vaccinated	91.1	94.2	94.2	94.6	94.7	94.3	94.0	92.7	91.2	90.3

Influenza vaccine coverage rates for residents of long-term care facilities in each DHA are shown in Table 7. Coverage rates ranged from 64% (DHA 7) to approximately 98% (DHA 4). The target coverage rate of 95% was reached in DHA 1, DHA 3, DHA 4 and DHA 9.

**Table 7: Influenza immunization coverage rates for residents of long-term care facilities by DHA, Nova Scotia, 2008–2009**

DHA	Number of residents in LTC	Number vaccinated	Percent vaccinated
1	597	567	95.0
2	461	405	87.9
3	407	388	95.3
4	340	332	97.6
5	238	218	91.6
6	436	396	90.8
7	367	235	64.0
8	1324	1184	89.4
9	2152	2037	94.7
Nova Scotia	6322	5762	91.1

### Health Care Workers

Acute and long-term care facilities, as well as continuing care/home care agencies, provide the District Health Authorities with the total number of health care workers that they employ, as well as the number who received influenza vaccine. Coverage rates were calculated separately for those working in direct patient care and support staff and are presented by setting (Tables 8 and 9).

The national target for vaccine coverage in health care workers is 70%. Nova Scotia met this target in for the first time in 2008–2009 among support staff of long term care facilities (Table 8). Vaccine coverage estimates were higher overall in staff of long term care facilities than in staff of acute care facilities, and this trend has been observed since the 2003–2004 influenza season.

**Table 8: Percentage of health care workers vaccinated for influenza (direct care and support staff) by setting, Nova Scotia, 2003–2009**

Year	Acute Care		Long-Term Care	
	Direct Care	Support Staff	Direct Care	Support Staff
2008–2009	36.8	44.1	68.1	70.3
2007–2008	40.7	53.9	61.1	66.9
2006–2007	38.4	67.0	65.7	63.2
2005–2006	54.3	52.0	69.0	67.4
2004–2005	46.3	51.8	64.4	67.7
2003–2004	46.1	49.2	61.6	64.6

Vaccine coverage rates for staff of acute and long-term care facilities by DHA are shown in Table 9. The highest vaccine coverage rate was reported in support staff of long-term care facilities (70%), while the lowest was reported in direct care staff of acute care facilities (37%).

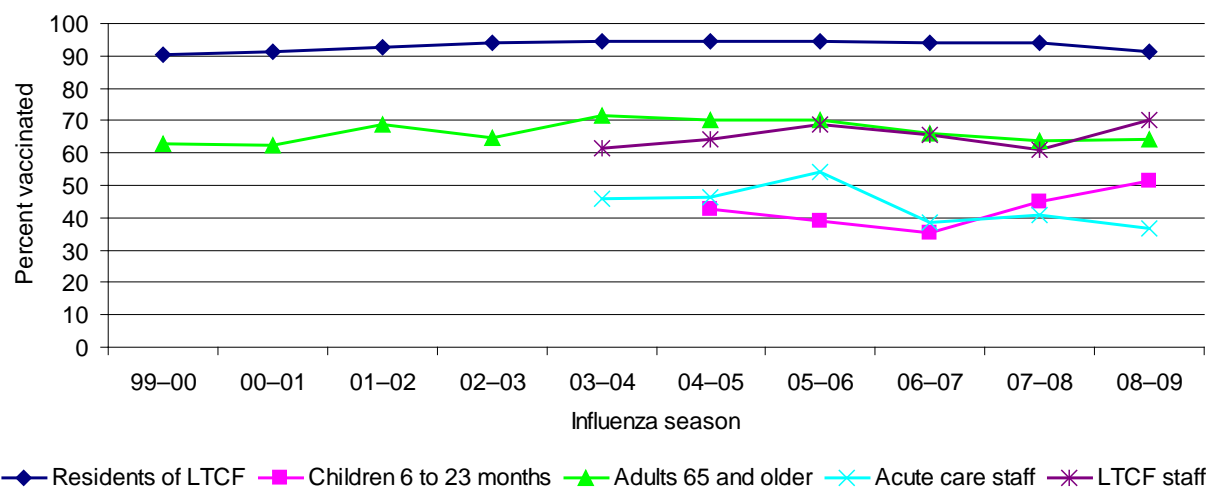
**Table 9: Influenza immunization coverage rates for health care workers (direct care and support staff) by setting and DHA, 2008–2009**

DHA	Acute Care						Long-Term Care					
	Direct Care			Support Staff			Direct Care			Support Staff		
	n	total	%	n	total	%	n	total	%	n	total	%
1	178	450	39.6	370	629	58.8	453	568	79.7	200	266	75.2
2	409	638	64.1	281	442	63.4	323	401	80.5	115	243	47.3
3	324	548	59.1	589	912	64.6	255	369	69.1	148	205	72.2
4	199	430	46.3	141	385	36.6	245	257	95.3	110	114	96.5
5	174	189	92.1	134	298	45	150	210	71.4	74	122	60.7
6	156	276	56.5	241	332	72.6	256	465	55.1	142	217	65.4
7	258	627	41.1	182	328	55.5	150	260	57.7	450	477	94.3
8	359	1247	28.8	873	1903	45.9	957	1519	63	405	615	65.9
9	2186	6790	32.2	1745	4673	37.3	1279	1928	66.3	661	1022	64.7
Nova Scotia	4243	11195	37.9	4556	9902	46.0	4068	5977	68.1	2305	3281	70.3

### Influenza Vaccination Trends in Nova Scotia, 1999-2009

Based on available data, Nova Scotia has experienced relative stability in influenza vaccine coverage rates in each of the groups described in this report (Figure 7). Data indicate a slight increase from previous seasons in coverage rates in children aged 6 months to 23 years, and a slight decreasing trend in coverage rates in adults 65 years of age and older, as well as in residents of long-term care facilities. Acute care staff had decreased coverage rates in both direct care and support staff. Long-term care facilities had a slight increase in coverage rates in both direct care and support staff.

**Figure 7: Seasonal influenza vaccination trends in Nova Scotia, 1999–2009**



### Adverse Events Following Immunization (AEFI)

During the 2008–2009 influenza seasonal immunization campaign, two adverse events following immunization (AEFI) were reported in Nova Scotia. Both were moderate in nature (local reaction at injection site and rash). Neither was admitted to hospital.

## Conclusion

The 2008–2009 influenza season was marked by the presence of pH1N1, contributing to a large number of laboratory-confirmed cases and the extension of case detection through the summer months. Seasonal influenza vaccination rates have been relatively stable in Nova Scotia since the introduction of the program to the various population groups described in this report. It must be noted however, that data collection methods for seasonal influenza vaccine are less than optimal and the province would benefit from an immunization registry.

## References

1. Heymann, D.L. (Ed.) (2004). *Control of Communicable Diseases Manual*. American Public Health Association: Washington.
2. The National Advisory Committee on Immunization. *Canadian Immunization Guide*, 7th ed. Ottawa: PHAC, 2006. Cat. no. HP40-3/2006E. (<http://www.phac-aspc.gc.ca/publicat/cig-gci/index.html>)
3. Health Canada. Influenza (The “Flu”). [Date Modified: 2005 November]. Available from: [http://www.hc-sc.gc.ca/hl-vs/alt\\_formats/pacrb-dgapcr/pdf/iyh-vsv/diseases-maladies/flu-grippe-eng.pdf](http://www.hc-sc.gc.ca/hl-vs/alt_formats/pacrb-dgapcr/pdf/iyh-vsv/diseases-maladies/flu-grippe-eng.pdf)
4. Public Health Agency of Canada. An Advisory Committee Statement (ACS), National Advisory Committee on Immunization (NACI), Statement on Influenza Vaccination for the 2008-2009 Season. *CCDR* 2008; 34.