



STAFF REPORT INFORMATION ONLY

2015 Influenza Update

Date:	November 13, 2015
To:	Board of Health
From:	Medical Officer of Health
Wards:	All
Reference Number:	

SUMMARY

This report provides an overview of the 2014-15 influenza season, as well as a description of Toronto Public Health's (TPH) planned activities for the 2015-16 influenza season.

Financial Impact

There are no financial impacts arising from this report.

DECISION HISTORY

At the November 17, 2014 Board of Health meeting the Medical Officer of Health provided an influenza update, including immunization rates of HCWs in Toronto healthcare facilities for the 2013-14 influenza season (<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2014.HL34.4>).

ISSUE BACKGROUND

Influenza is a highly contagious acute viral infection of the respiratory tract that causes annual outbreaks and periodic worldwide epidemics. It is estimated that each year, 10-20% of the population is infected with influenza.¹ In Canada, an average of 12,220 hospitalizations and 3,500 deaths due to influenza occur annually.² There are three types of influenza viruses: A, B, and C. Influenza A viruses are further divided into subtypes based on two viral surface glycoproteins: hemagglutinin (H) and neuraminidase (N). Only influenza A is associated with pandemics; both influenza A and B viruses can cause seasonal outbreaks. Influenza C is rarely reported as a cause of human illness.

Under the provincial Health Protection and Promotion Act, and in accordance with the Ontario Public Health Standards and associated protocols, Ontario's 36 local public health units are mandated to:

- Conduct surveillance for influenza;
- Promote and provide provincially-funded influenza immunization for the general public and priority populations;
- Investigate reported cases of influenza;
- Provide information and education to the general public and HCWs regarding influenza prevention and control; and
- Lead the development of a local pandemic influenza plan.

Influenza vaccine is recognized as the "best tool for prevention of influenza currently available".³ The effectiveness of the flu vaccine can vary from season to season and depends on at least two factors: characteristics of the person being vaccinated (for example, age and health status), and the similarity or "match" between the flu viruses the vaccine is made to protect against and the flu viruses spreading in the community.⁴ In healthy adults and children, the flu vaccine given by injection is about 60% effective in preventing influenza illness,^{5,6,7,8,9} and is about half as effective in the elderly.¹⁰ The nasal spray vaccine works better in healthy children two to five years old and is about 80% effective in this age group.¹¹ Since 2000, the influenza vaccine has been free to everyone aged six months or older who lives, works or goes to school in Ontario through the provincial Universal Influenza Immunization Program (UIIP). The flu vaccine is available to the public in a variety of settings such as primary care offices, public health clinics, work-place clinics, and at participating pharmacies.

Influenza and Health Care Workers:

Influenza transmission and outbreaks in hospitals^{12,13,14,15,16} and long-term care homes (LTCH)s^{17,18,19} are well documented and can result in significant patient/resident morbidity and mortality. The increased risk of severe influenza to residents/patients in these facilities is related to their advanced age and/or underlying health problems. Healthcare workers can acquire influenza from patients/residents and the community and can transmit infection to patients/residents, other HCWs and their family members.

Four randomized controlled trials have shown that HCW influenza immunization in chronic care/LTCH settings for the elderly reduces patient mortality.^{20,21,22,23} Despite comprehensive, multifaceted programs to encourage HCW immunization, HCW influenza immunization coverage rates have remained unacceptably low. As a result, numerous public health agencies and professional associations, such as the Canadian National Advisory Committee on Immunization (NACI), the Canadian Nurses Association, and the United States Centers for Disease Control and Prevention, recommend that influenza immunization of HCWs be a condition of service or appointment.

There has been a trend in the United States and Canada for hospitals to implement condition of service influenza vaccination policies, such as "vaccination required" or "vaccinate or mask" policies. In 2012, two large Canadian healthcare organizations, the British Columbia Regional Health Authorities (BCRHA) and Horizon Health Network (HHN) in New Brunswick, introduced vaccinate-or-mask policies, followed by Saskatchewan's Health Regions & Cancer Agency two years later. By 2014, more than 30 Ontario hospitals had introduced vaccinate or mask policies, including 11 Toronto Academic Health Science Network (TAHSN) hospitals. A number of organizations have noted a decrease in the number of influenza outbreaks in their hospitals, a decrease in sick days and, in some cases, routine closures during flu seasons have dropped.²⁴

While HHN's vaccinate or mask policy was supported by the New Brunswick Nurses Union, some policies in other jurisdictions have been opposed. In the case of the BCRHA, the arbitrator dismissed the union grievance stating the policy requiring HCWs to get a flu shot or wear a mask while caring for patients during influenza season was a reasonable and valid exercise of the employer's rights. However, recently the arbitrator of a union grievance against the Sault Area Hospital's (SAH) vaccinate or mask policy concluded that it was unreasonable. Saskatchewan is reviewing the arbitrator's decision and has shifted their policy to voluntary until their review is completed.

In 2015, the MOHLTC convened a Provincial Health Care Worker Influenza Immunization Executive Steering Committee to review evidence and provide advice to the Minister of Health and Long-Term Care to inform future decision-making on HCW influenza immunization in Ontario. Technical and Stakeholder Advisory Panels will support the Executive Steering Committee. In addition, the MOHLTC has recently announced the formation of a scientific working group to review and modernize the Universal Influenza Immunization Program (UIIP).

In 2015-16, the eleven TAHSN hospitals are continuing with efforts in collaboration with TPH to improve patient safety and promote HCW wellness, through a comprehensive approach to influenza prevention and control including "vaccine or mask" policies.

COMMENTS

SUMMARY OF THE 2014-15 INFLUENZA SEASON

A. Influenza Activity 2014-15

In the 2014-15 influenza season, a total of 3,211 lab-confirmed influenza cases were reported in the City of Toronto, a 27% increase over last season (2,521 people) and the highest number of reports over the previous 10 years (including the pandemic year). The season peaked in early January, and influenza A was the predominant strain accounting for 92% of reported cases. A total of 211 institutional influenza outbreaks were reported in 2014-15, the highest number of outbreaks reported over the previous decade (10-year mean of 54 outbreaks). Of these 211 outbreaks, 95% were due to influenza A.

The highest rates of illness in the 2014-15 season were reported in adults 65 years of age and older (535.3 cases per 100,000), followed by children under five years of age (137.6 cases per 100,000) (see Table 1). Forty-three percent of cases (1,392 people) reported to TPH were hospitalized, and 3% (89 people) of all reported cases died. The proportions hospitalized and died were comparable to the five year average.

Table 1: Number of lab-confirmed influenza cases by age group. Toronto, comparison of 2014-15 season to the previous, 5-year mean (2008-09 - 2013-14*) and to the H1N1 pandemic cases.

Age group (years)	2014-15 Season		5-year mean 2008-09 - 2013-14*		H1N1 Pandemic (April 2009 - August 2010)
	Number of cases (%)	Rate [†]	Number of cases (%)	Rate [†]	Number of cases (%)
< 5	198 (6)	137.6	274 (17)	192.4	407 (13)
5 - 14	120 (4)	46.3	135 (8)	51.2	878 (29)
15 - 24	82 (3)	22.9	50 (3)	14.3	558 (18)
25- 44	270 (8)	30.7	218 (14)	25.3	701 (23)
45 - 64	389 (12)	53.3	251 (16)	35.5	390 (13)
65+	2151 (67)	535.3	664 (42)	174.8	119 (4)
Unknown	1 (<1)	--	2 (<1)	--	17 (1)
Total	3211 (100)	115.8	1594 (100)	58.9	3070 (100)

* Excludes the H1N1 pandemic cases

† Rate per 100,000 population

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS), extracted September 29, 2015.

During the 2014-15 influenza season, the National Microbiology Laboratory (NML) received 2,395 isolates from provincial laboratories across the country, of which 1,469 (or 61%) were influenza A and 926 (or 39%) were influenza B. The majority of influenza B strains typed by the NML were a good match to the vaccine influenza B component. However, the circulating influenza A strain that predominated in the 2014-15 season (influenza A H3N2) drifted and was a poor match to the vaccine strain, which provided little or no protection.^{25,26}

B. Influenza Immunization Community Campaign 2014-15

Toronto Public Health conducted a total of 13 community influenza immunization clinics at eight different sites across Toronto between October 23 and November 29, 2014, immunizing a total of 6,866 individuals. This is considerably less than the previous five year season average of 27,464 individuals immunized against influenza by TPH staff (excluding the 2009-10 pH1N1 pandemic influenza season). The reason for this can be attributed to increased access to the influenza vaccine at other sites.

Since 2012-13, pharmacies have been providing influenza vaccine to people five years of age and older who have a current Ontario Health Card, providing residents greater access to influenza vaccine. While the number of participating pharmacies and the number of doses given by pharmacies has quadrupled, attendance at TPH clinics has decreased by

more than 75%. It is important to note that a decrease in attendance at public health clinics has been experienced across the province since pharmacies began to provide influenza vaccine.

As in previous years, TPH partnered with Toronto Emergency Medical Services (TEMS) to provide influenza vaccine to homeless and under-housed individuals at the City's drop-in centres, homeless shelters, and clients of TPH harm reduction programs. In 2014-15, TPH also worked in collaboration with community stakeholders to pilot four additional clinics for marginalized clients. Through these efforts, 859 marginalized clients received influenza vaccination in 2014-15.

C. Influenza Immunization Rates Among Healthcare Workers in Toronto Health Care Facilities 2014-15

In 2014-15, TPH undertook a number of activities in an effort to increase HCW influenza immunization rates:

- Worked with representatives from TAHSN to implement a "vaccinate or mask" influenza immunization policy across 11 TAHSN hospitals with the goal of protecting patients, employees, professional staff, students and volunteers from influenza infections;
- Collaborated with TAHSN hospitals to update the "Be a Flu Fighter" social marketing campaign. Posters, immunization cards, flu cart flags, and badge stickers were developed for use by TAHSN hospitals and TPH;
- Included reminder for Toronto HCW's to get their flu shot in the October Influenza Season Alert sent in Communiqué, the TPH physician newsletter; and
- Participated in the initial meeting of the newly established Ministry of Health & Long-Term Care (MOHLTC) Technical Advisory Panel which supports the Health Care Worker Influenza Immunization Executive Steering Committee.

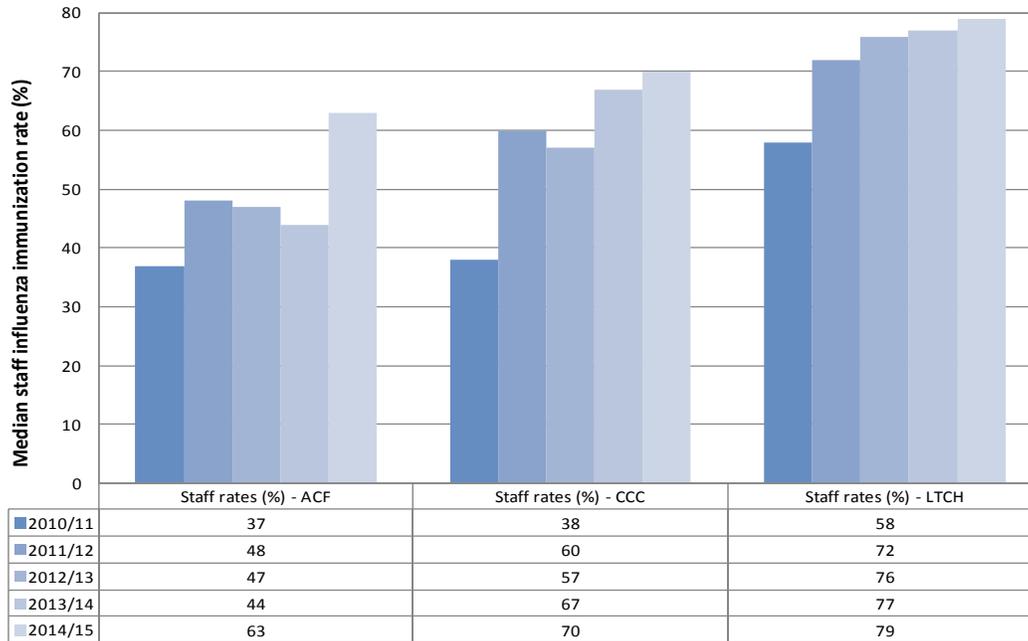
As of the December 15, 2014 reporting date, the median influenza immunization coverage rates among HCWs in Toronto were (see Figure 1):

- 63% (ranging from 29% to 79%) for acute care facilities, an increase of 19% from the previous year, and 2% higher than the Ontario median coverage rate for hospitals;
- 70% (ranging from 32% to 93%) for complex continuing care/rehab facilities, an increase of 3% from the previous year, and 9% higher than the Ontario median rate; and
- 79% (ranging from 13% to 100%) for LTCHs, an increase of 2% from the previous year, and 3% higher than the Ontario median rate.

See Appendix A for a detailed breakdown of HCW influenza immunization rates by individual Toronto healthcare facility.

Analysis of coverage rates for the 11 TAHSN hospitals that participated in the "vaccinate or mask" influenza immunization policy revealed that their overall median coverage rate of 73% was 31% higher than other Toronto acute care facilities and 5% higher than other complex continuing care/rehab hospitals. The median coverage rate in acute care facilities that participated in the "vaccinate or mask" policy increased by 20% from the previous year, as compared with a 10% increase in the other Toronto acute care facilities.

Figure 1: Median staff influenza immunization rates by facility type and season. Toronto, 2010/11 to 2014/15



ACF: Acute Care Facility; CCC: Complex Continuing Care/Rehabilitation Facility; LTCH: Long-Term Care Home.

Facility type

2015-16 INFLUENZA SEASON

A. Influenza Surveillance for 2015-16

As in previous years, TPH will conduct surveillance in order to detect the arrival of influenza in the City, confirm the types of influenza virus(es) that are circulating, monitor any changes in the severity of illness associated with the virus, and identify which groups (e.g., children ages five years or younger, seniors/elderly or the young and healthy) are most affected by the year's circulating strain(s).

Toronto Public Health collects, collates, analyses and disseminates data from the following sources:

- Reportable disease notifications from laboratories and clinicians;
- Institutional (LTCHs and hospitals) respiratory outbreak notifications;
- Syndromic Surveillance, using chief complaint data, from Toronto hospital emergency departments (ED); and

- School-based absenteeism from both the Toronto District School Board and the Toronto Catholic District School Board.

In addition, TPH actively monitors the following:

- Reports of influenza activity in neighbouring health regions, the rest of Canada and other nations (e.g. HealthMap, CIOSC, PROMED);
- Weekly summaries of test results for influenza and other respiratory viruses from Public Health Ontario Laboratories; and
- Sentinel physician influenza-like illness (ILI) counts from the Flu Watch program co-ordinated by the Public Health Agency of Canada.

Toronto Public Health will continue to publish the Weekly Influenza News report which provides epidemiologic data and influenza activity trends for health professionals. This report is emailed to subscribers and published on the TPH website during the influenza season (usually October to April). Alerts and updates on global or local communicable disease activities, including information on influenza (e.g., notification that influenza has arrived in Toronto, advisory of changes detected in influenza epidemiology, importance of HCW influenza immunization), are also included in Communiqué, the TPH electronic physician newsletter and available on TPH's Health Professionals website. Healthcare professionals may subscribe to receive these products directly via email.

As of November 13, 2015, there have been 20 lab-confirmed influenza cases and no influenza outbreaks reported in Toronto for the 2015/16 influenza season. Cases ranged in age from one to 96 years old; five cases were hospitalized and no deaths have occurred. Fifteen cases were typed as influenza A and five were typed as influenza B.

At this time, it is too early to know if the vaccine influenza strains will be a good match with circulating influenza strains. Nevertheless, influenza vaccine remains the best defence against influenza. Other recommended preventive measures include: wash your hands often; avoid touching your eyes and face; do not share personal items such as drinking cups; cover your cough or sneeze; and stay home when ill.

B. Influenza Immunization Community Campaign 2015-16

Until recently, influenza vaccines were made to protect against three different influenza strains (two influenza As and one influenza B). This year, four-strain (quadrivalent) vaccines are now available in Canada. These vaccines include a second influenza B strain and thus provide broader protection. They can be given by injection or nasal spray and are free for Ontario children six months to 17 years of age as the burden of influenza B is highest among people less than 20 years of age.²⁷

For the 2015-16 UIIP, the MOHLTC is funding seven influenza vaccines: six that are given by injection (Agriflu®, Fluad®, Fluviral®, Influvac®, FluLaval Tetra®, Fluzone Quadrivalent®); and one given by nasal spray for children aged six months to 17 years old (FluMist®).

Toronto Public Health is conducting nine community influenza immunization clinics across the City over five weeks that began at the end of October 2015. Locations include shopping malls, Civic Centres, and public libraries. The number of TPH clinics has been reduced this season given the increased availability of influenza vaccine through approximately 450 Toronto pharmacies. However, some individuals do not have an Ontario Health Card and/or lack access to primary care, and pharmacy-run flu shot clinics cannot provide vaccine to children less than five years of age; TPH clinics assist with the provision of influenza vaccine to these populations.

Toronto Public Health also continues to partner with TEMS to provide influenza vaccine to the City's most vulnerable populations through shelters, drop-in centres, and harm reduction programs. In addition, TPH will pilot five influenza immunization clinics in high priority neighbourhoods.

Information on influenza infection and the influenza vaccine is provided to the public (translated into six languages) and healthcare providers on the TPH website. Toronto Public Health is promoting the TPH clinics by distributing posters of the clinic schedule to more than 5,000 community partners (e.g., schools, community centres, and libraries). In addition, TPH is advertising the clinics through on-line ads (e.g., CP24, CTV News), social media (Twitter, Facebook) and a media event that announced the TPH 2015-16 community influenza immunization campaign on October 28, 2015.

C. Influenza Immunization among Healthcare Workers in Toronto Healthcare Facilities 2015-16

In 2015-16, TPH will undertake the following activities in an effort to increase influenza immunization rates:

- Continue to work with representatives from the TAHSN Influenza Immunization Implementation Steering Committee;
- Collaborate with TAHSN hospitals to update joint "Be a Flu Fighter" campaign materials (posters, immunization cards, flu cart flags, and badge stickers);
- Include a reminder for Toronto healthcare workers to get their flu vaccine in the October influenza issue of *Communiqué*;
- Continue to participate in the MOHLTC Health Care Worker Influenza Immunization Technical Advisory Panel; and
- Participate in the provincial Review and Modernization of the UIIP.

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ATTACHMENT

Appendix A: Influenza Immunization Coverage Rates for Healthcare Workers by
Toronto Health Care Facility, 2014-15

APPENDIX A: Influenza Immunization Rates for Healthcare Workers by Toronto Health Care Facility, 2014-15 Influenza Season (Reporting date as of December 15, 2014)

Acute Care Facilities	Total Staff	Number of Staff Immunized	Staff Coverage Rate* (%)
Sunnybrook Health Sciences Centre (Holland Site) [†]	240	189	79
St. Joseph's Health Centre [†]	2663	2004	75
Sunnybrook Health Sciences Centre [†]	6198	4653	75
North York General Hospital – General Division [†]	3954	2896	73
St. Michael's Hospital [†]	6344	4562	72
North York General Hospital – Branson Division [†]	184	127	69
Mount Sinai Hospital [†]	5229	3583	69
The Hospital for Sick Children [†]	8194	5585	68
Women's College Hospital [†]	978	649	66
Toronto East General Hospital [†]	2862	1869	65
Trillium Health Partners	5160	3229	63
University Health Network – Toronto Western Hospital	3654	2266	62
University Health Network – Toronto General Hospital	8913	5220	59
William Olser Health Centre, Etobicoke General Hospital	1304	636	49
University Health Network – Princess Margaret Hospital	3386	1651	49
The Scarborough Hospital – General Division	2343	994	42
The Scarborough Hospital – Grace Division	1287	484	38
Humber River Regional Hospital – Church Site	1660	610	37
Rouge Valley Centenary Hospital	2823	982	35
Humber River Regional Hospital – Finch Site	1035	320	31
Humber River Regional Hospital – Keele Site	143	42	29

*Influenza immunization rate based on the number of immunized staff of total number of staff at the healthcare facility.

[†]Toronto Academic Health Sciences Network hospitals (TAHSN) that implemented a vaccinate or mask policy in 2014-15.

Complex Continuing Care/Rehabilitation Facilities	Total Staff	Number of Staff Immunized	Staff Coverage Rate* (%)
Holland Bloorview Kids Rehabilitation Hospital [†]	1163	1087	93
McCall Centre for Continuing Care	168	156	93
Centre for Addiction and Mental Health – Queen Site [†]	2816	2307	82
St. John's Rehabilitation Hospital [†]	697	526	75
Centre for Addiction and Mental Health – College Site [†]	1058	798	75
Runnymede Healthcare Centre	518	390	75
Bridgepoint Active Healthcare	1208	854	71
Providence Healthcare Hospital	961	675	70
Baycrest Geriatric Health Care System [†]	1421	974	69
The Salvation Army – Toronto Grace Health Centre	311	212	68
West Park Healthcare Centre	1054	709	67
Toronto Rehabilitation Institute – Lyndhurst Centre	371	230	62
Toronto Rehabilitation Institute – University Centre	1238	687	55
Toronto Rehabilitation Institute – Bickle Centre	534	286	54
Toronto Rehabilitation Institute – Rumsey Centre	105	34	32

*Influenza immunization rate based on the number of immunized staff of total number of staff at the healthcare facility.

[†]Toronto Academic Health Sciences Network hospitals (TAHSN) that implemented a vaccinate or mask policy in 2014-15.

Long-Term Care Homes (LTCHs)	Total Staff	Staff Immunized	Staff Coverage Rate* (%)
McCall Centre Interim LTC Unit	25	25	100
Mon Sheong Scarborough Long Term Care Centre	193	191	99
Leisureworld Caregiving Centre – Cheltenham	188	186	99
Rose of Sharon Korean Long Term Care	89	88	99
Yee Hong Centre for Geriatric Care – McNiccoll Site	297	293	99
Mon Sheong Home for the Aged (Downtown)	143	141	99
Yee Hong Centre for Geriatric Care – Finch Site	339	326	96
Leisureworld Caregiving Centre O'Connor Court	206	197	96
Leisureworld Caregiving Centre – St.George	262	249	95
North Park Nursing Home	118	112	95
Kennedy Lodge Nursing Home	307	291	95
Craiglee Nursing Home – Scarborough	208	196	94
Ehatore Nursing Home	33	31	94
Elm Grove Living Centre Inc.	134	125	93
Extendicare – Scarborough	214	198	93
Chester Village	250	230	92
Baycrest Hospital - Apotex Centre (LTCH) [†]	1098	1010	92
Leisureworld Caregiving Centre – O'Connor Gate	206	189	92
Villa Colombo	510	460	90
Norwood Nursing Home	70	63	90
Extendicare – Bayview	253	227	90
Tony Stacey Centre for Veteran's Care Home for the Aged	144	129	90
Hellenic Home Care for the Aged – Toronto	102	91	89
Garden Court Nursing Home	55	49	89
Leisureworld Caregiving Centre – Lawrence	309	275	89
Sunnybrook Veterans Centre [†]	638	561	88
Leisureworld Caregiving Centre – Rockcliffe	239	210	88

*Influenza immunization rate based on the number of immunized staff of total number of staff at the healthcare facility.

[†]Toronto Academic Health Sciences Network hospitals (TAHSN) that implemented a vaccinate or mask policy in 2014-15.

Long-Term Care Homes (LTCHs) (continued from previous page)	Total Staff	Staff Immunized	Staff Coverage Rate* (%)
Fairview Nursing Home	112	98	88
Cedarvale Terrace Long Term Care Home	258	223	86
Extendicare – Rouge Valley Nursing Home	196	169	86
The Wexford	280	241	86
Leisureworld Caregiving Centre – Scarborough	289	248	86
Lakeshore Lodge	162	137	85
Central Park Lodge Westside	251	212	84
Main Street Terrace	209	175	84
Tendercare Living Centre – Scarborough	379	317	84
Castleview Wychwood Towers	435	363	83
The Westbury	234	191	82
Eatonville Care Centre	325	264	81
West Park Long Term Care Centre	218	177	81
Ina Grafton- Gage Home	199	160	80
Thompson House	159	127	80
Leisureworld Caregiving Centre – Etobicoke	218	173	79
Maynard Nursing Home	92	73	79
True Davidson Acres	217	172	79
Leisureworld Caregiving Centre – Ellesmere	325	257	79
Kensington Gardens	543	429	79
Belmont House	290	228	79
The O'Neill Centre	191	149	78
Dom Lipa Nursing Home – Etobicoke	96	74	77
Fudger House	266	205	77
Drs. Paul and John Reikai Centre	134	103	77
Harold and Grace Baker Centre	173	132	76
Humber Valley Terrace	156	119	76
Bendale Acres	336	252	75
Seven Oaks	255	191	75
Cummer Lodge	449	332	74
Hellenic Home for the Aged – Scarborough	168	124	74

*Influenza immunization rate based on the number of immunized staff of total number of staff at the healthcare facility.

Long-Term Care Homes (LTCHs) (continued from previous page)	Total Staff	Staff Immunized	Staff Coverage Rate* (%)
Providence Long Term Care Home	364	263	72
North York General Hospital – Senior's Health Centre	216	155	72
St. Clair O'Connor Community Nursing Home	53	38	72
Nisbet Lodge	224	159	71
The Gibson Long Term Centre	328	229	70
Extendicare – Guildwood	231	161	70
Vermont Square	185	127	69
Wellesley Central Place	191	130	68
Lakeside Long Term Care Centre	167	110	66
Wesburn Manor	244	156	64
The Heritage Nursing Home	218	139	64
Leisureworld Caregiving Centre – Norfinch	191	121	63
Suomi Koti Nurisng Home Toronto	99	60	61
Leisureworld Caregiving Centre Altamont	202	115	57
Isabel & Arthur Meighen Health Centre	238	134	56
Downsview Long Term Care Centre	302	161	53
Kipling Acres	275	130	47
Carefree Lodge	208	96	46
Trilogy Long Term Care Centre	301	138	46
Yorkview Lifecare Centre	351	150	43
Shepherd Lodge Nursing Home	338	140	41
Valley View Residence	207	79	38
The Village of Humber Heights	308	114	37
Labdara Lithuanian Nursing Home	157	58	37
Ukrainian Canadian Care Centre	386	141	37
Copernicus Lodge	392	123	31
White Eagle Nursing Home	87	27	31
Ivan & Franko Home – Etobicoke	103	13	13

*Influenza immunization rate based on the number of immunized staff of total number of staff at the healthcare facility.

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