



STAFF REPORT INFORMATION ONLY

Influenza Immunization Rates of Healthcare Workers in Toronto Healthcare Facilities

Date:	May 17, 2010
To:	Board of Health
From:	Medical Officer of Health
Wards:	All
Reference Number:	

SUMMARY

Influenza is a highly contagious acute viral infection of the respiratory tract which causes annual seasonal outbreaks and periodic worldwide pandemics. Annual immunization of persons at high risk, and of health care workers (HCWs) and others who are capable of transmitting influenza to those at high risk, is the most effective measure for reducing the impact of influenza. Annual influenza immunization of HCWs is recommended by the National Advisory Committee on Immunization (NACI).¹

The 2009/2010 influenza season was “a different flu season”² with a pandemic influenza strain, pandemic H1N1 or pH1N1, becoming the dominant circulating flu virus. The provincial influenza vaccination program was adapted in response to the pandemic. HCWs were identified as a priority group for pH1N1 vaccine as soon as the vaccine became available in late October 2009. Seasonal flu vaccine was offered to the general public, including HCWs, beginning December 2009.

In order for immunization programs to be successful, high rates of coverage are required. However, influenza immunization coverage among HCWs in Toronto and Ontario remains low despite direct efforts to increase the rates before and during the pH1N1 pandemic.

During the 2009/2010 influenza season, the median coverage rate for pH1N1 influenza immunization among HCWs working in institutional settings in Toronto was 58% for acute care facilities (ACFs), 59% for Complex Continuing Care (CCC) hospitals, and 38% for Long-Term Care Homes (LTCHs) (Tables 1a, 1b and 1c). The rates for ACFs and CCC hospitals are

comparable to those reported for seasonal flu vaccine in the previous two seasons (2007/2008 and 2008/2009) in Toronto; the rate for LTCHs was lower.

The median coverage rate for seasonal influenza immunization among HCWs working in institutional settings in Toronto was 17% for ACFs, 21% for CCC hospitals, and 42% for LTCHs (Tables 1a through 1c). These rates are lower than those reported for the previous two seasons (2007/2008 and 2008/2009), and much lower than the annual influenza immunization coverage rate target of 70% recommended by the Ontario Ministry of Health and Long Term Care (MOHLTC).

This report provides pH1N1 and seasonal influenza immunization coverage rates for HCWs in Toronto hospitals (acute and complex continuing care) and long-term care homes in 2009/2010.

Financial Impact

There are no financial implications arising from this report.

DECISION HISTORY

At its meeting of October 19, 2009, the Medical Officer of Health reported on influenza immunization rates of healthcare workers in Toronto healthcare facilities for the 2008/2009 flu season. These rates were identified as generally low and therefore recommendations were made for a concerted effort to improve them.

The Board of Health requested the Medical Officer of Health to provide annual reports on influenza immunization coverage rates among health care workers in Toronto health care facilities for the next three years.

The Board of Health urged the CEOs of acute care hospitals, complex continuing care hospitals, long term care homes and nursing agencies to provide a comprehensive program to promote annual influenza immunization of health care workers.

The Board of Health also made recommendations to the Ontario Minister of Health and Long-Term Care to include annual institutional HCW influenza immunization rates as an indicator within the publicly reported Ontario Patient Safety Initiatives, and to explore options to make annual influenza immunization mandatory for HCWs if coverage rates for healthcare institutions do not improve over the next three years.

ISSUE BACKGROUND

Influenza is a highly contagious acute viral infection of the respiratory tract which causes annual seasonal outbreaks and periodic worldwide pandemics. Influenza transmission and outbreaks in hospitals^{3,4,5,6,7} and LTCHs^{8,9,10} are well documented and can result in significant patient, resident and staff morbidity and mortality. In Toronto, an average of 38 seasonal influenza outbreaks are reported each year from acute care hospitals, complex continuing care hospitals, and LTCHs. The increased risk of influenza to residents and patients in these facilities is related not only to age and underlying health problems, but also because of the setting, in which

residents and patients are cared for in close proximity and have close contact with a range of health care providers. Health care workers can acquire influenza from patients and readily transmit infection to other patients, other HCWs, and their family members.

Influenza immunization is effective in preventing influenza illness in 70-90% of immunized healthy adults^{11,12} and serious adverse reactions associated with the influenza vaccine are rare.¹³ Annual influenza immunization of HCWs is recommended by the National Advisory Committee on Immunization (NACI).¹⁴ The Ontario Ministry of Health and Long-Term Care (MOHLTC) has suggested a target annual facility-wide influenza immunization coverage rate of 70% for health care workers in facilities.

Influenza vaccine is provided to the staff of hospitals and LTCHs in Ontario through the Universal Influenza Immunization Program. Under provincial protocols, influenza vaccine coverage rates from LTCHs and public hospitals are to be reported to the local Medical Officer of Health by December 1st of each year. The rates are then reported to the MOHLTC by local health units.

The 2009/2010 flu season was a “different” flu season, with the pH1N1 influenza virus replacing seasonal influenza strains as the dominant circulating flu virus.¹⁵ The novel pH1N1 strain emerged too late to be included in the 2009/2010 seasonal influenza vaccine and, as a result, a separate pH1N1 vaccine was produced.

On September 24, 2009, the MOHLTC endorsed a staged approach to seasonal and pH1N1 vaccination eligibility for Ontarians in the “different” 2009/2010 flu season. The recommended vaccine sequence was:

1. Seasonal influenza vaccine for individuals aged 65 and older, including LTCH residents.
2. pH1N1 influenza vaccine, with groups such as HCWs recommended to be among the first to be immunized against pH1N1.
3. Seasonal influenza vaccine for those not yet vaccinated against seasonal flu.

The rationale for the recommended vaccine sequence in Ontario was that seasonal flu viruses generally pose the greatest risk to seniors, who are at highest risk of serious complications, hospitalizations and even death resulting from infections with seasonal flu viruses. Moreover, adults born before 1957 appeared to have some immunity to pH1N1, likely due to residual immunity from prior exposure to another H1N1 strain. Other population groups (such as HCWs under 65 years of age) were encouraged to delay immunization with the seasonal flu vaccine. In part this was due to preliminary results from Canadian studies suggesting a potential association between prior seasonal influenza vaccination and the risk of acquiring infection with pH1N1.¹⁶ It was also because pH1N1 was expected to be the predominant influenza strain circulating in the fall and winter months in Canada.

COMMENTS

Influenza Vaccine Availability and Distribution for Toronto Healthcare Facilities

Community-based and workplace flu vaccine providers in Toronto administer the majority of seasonal flu vaccines each year, ordering the vaccine directly from the Ontario Government Pharmaceutical and Medical Supply Services (OGPMSS). Because this was a “different” flu season, in September 2009 the MOHLTC delegated responsibility for processing pH1N1 vaccine requests from all community-based providers to TPH and required providers to submit detailed data on vaccines administered to local public health units on a weekly basis.

When pH1N1 vaccine became available in late October 2009, TPH facilitated delivery of vaccine to HCWs as a key priority group through a variety of strategies:

- proactive communication with health care facilities and physicians regarding process for ordering vaccine and priority groups
- promotion of pH1N1 vaccine for health care workers as a high priority group¹⁷
- TPH partnered with Toronto Emergency Medical Services to offer immunization clinics for all health care workers from City-run LTCHs, EMS, and TPH
- TPH prioritized vaccine orders from health care facilities and pre-approved distribution of vaccine from the OGPMSS to individual facilities depending on vaccine availability and the number of HCWs at the facility. The MOHLTC initially provided vaccine in 500-dose packages, and each 10-dose vial had to be used within 24 hours of being opened. TPH worked together with the OGPMSS to successfully facilitate vaccine re-packaging to smaller quantities by early November 2009.
- ongoing communication regarding the availability of vaccine at TPH mass immunization clinics

In order to promote influenza vaccination, some acute care hospitals have successfully used multi-faceted immunization campaigns, including strategies such as incentives, stickers for staff ID badges to indicate having received vaccine, mobile flu vaccination carts, evening and weekend access to vaccination and strong support/championing by senior hospital leadership. In addition, TPH staff offered influenza immunization training sessions to all LTCHs.

Seasonal influenza vaccine ordering and distribution began in December 2009, utilizing the usual mechanisms via OGPMSS.

Influenza Immunization Coverage Rates in Toronto Healthcare Facilities

In 2009/2010, the median coverage rate for pH1N1 influenza immunization among HCWs in institutional settings in Toronto was 58% (ranging from 40% to 99%) for acute care facilities, 59% (ranging from 38% to 85%) for complex continuing care hospitals, and 38% (ranging from 0% to 97%) for LTCHs (Tables 1a through 1c). The pH1N1 influenza immunization rates in HCWs in both acute care and complex continuing care facilities are comparable to seasonal influenza immunization coverage rates reported for the previous two seasons in (2007/2008 and

2008/2009) in Toronto. The rate for LTCHs was lower than that in previous years. This may be due to uncertainty regarding the risk of pH1N1 in the older population these HCWs serve or the somewhat later availability of the vaccine for HCWs in smaller LTCHs.

Institutional rates of HCW seasonal influenza immunization were extremely variable and ranged from rates as high as 96% to as low as 0%. The median seasonal flu vaccination coverage rates were 17% (ranging from 0% to 44%) for acute care facilities, 21% (ranging from 11% to 55%) for complex continuing care hospitals, and 44% (ranging from 0% to 96%) for long term care homes (Tables 1a through 1c). These rates are much lower than those reported for the previous two flu seasons.

Table 1.a: Health Care Worker Influenza Immunization Coverage Rates by Flu Season and Vaccine Type, Toronto and Ontario, 2007/2008 - 2009/2010 - Acute Care Facilities

Flu Season and Vaccine Type	Toronto		Ontario
	N	Median Rate (Range)	Median Rate
2007/2008 Seasonal	17	40% (17% to 62%)	50%
2008/2009 Seasonal	18	42% (24% to 63%)	51%
2009/2010 pH1N1	18	58% (40% to 99%)	N/A
2009/2010 Seasonal	18	17% (0% to 44%)	N/A

Table 1.b: Health Care Worker Influenza Immunization Coverage Rates by Flu Season and Vaccine Type, Toronto and Ontario, 2007/2008 - 2009/2010 - Complex Continuing Care Hospitals

Flu Season and Vaccine Type	Toronto		Ontario
	N	Median Rate (Range)	Median Rate
2007/2008 Seasonal	17	38% (23% to 80%)	50%
2008/2009 Seasonal	16	55% (20% to 80%)	51%
2009/2010 pH1N1	16	59% (37% to 85%)	N/A
2009/2010 Seasonal	16	21% (11% to 55%)	N/A

Table 1.c: Health Care Worker Influenza Immunization Coverage Rates by Flu Season and Vaccine Type, Toronto and Ontario, 2007/2008 - 2009/2010 - Long Term Care Homes

Flu Season and Vaccine Type	Toronto		Ontario
	N	Median Rate (Range)	Median Rate
2007/2008 Seasonal	77	66% (19% to 98%)	77%
2008/2009 Seasonal	84	70% (19% to 98%)	77%
2009/2010 pH1N1	85	38% (0% to 97%)	N/A
2009/2010 Seasonal	84	44% (0% to 96%)	N/A

Specific immunization coverage rates (for both pH1N1 and seasonal influenza vaccines) for each of Toronto’s acute care and continuing care hospitals and long-term care homes are presented in Tables 2a-2c below.

Table 2a: Health Care Worker Influenza (Seasonal & pH1N1) Immunization Coverage Rates by Acute Care Hospital, Toronto, 2009/2010 Season

Acute Care Hospital	Total Staff	pH1N1		Seasonal Flu	
		# Staff Immunized	Staff Coverage Rate (%)	# Staff Immunized	Staff Coverage Rate (%)
University Health Network – Toronto Western Hospital	2947	2911	99	1192	40
University Health Network – Toronto General Hospital	6632	5673	86	2408	36
Mount Sinai Hospital	4226	3307	78	1866	44
University Health Network – Princess Margaret Hospital	2870	2198	77	1054	37
St. Michael's Hospital	5730	4277	75	870	15
The Hospital for Sick Children	6684	4450	67	1215	18
Toronto East General Hospital	2622	1618	62	368	14
St. Joseph's Health Centre	2897	1752	60	301	10
The Scarborough Hospital General – Division	3002	1774	59	706	24
The Scarborough Hospital – Grace Division	1731	995	57	334	19
Sunnybrook Health Sciences Centre	7241	4111	57	1616	22
Trillium Health Centre	4151	2252	54	39	1
North York General Hospital – General Division	2806	1472	52	469	17
Women's College Hospital	709	371	52	78	11
William Osler Health Centre, Etobicoke General Hospital	1450	658	45	0	0
North York General Hospital – Branson Division	278	126	45	54	19
Humber River Regional Hospital	3049	1268	42	303	10
Rouge Valley Centenary Hospital	2323	921	40	188	8

Table 2b: Health Care Worker Influenza (Seasonal & pH1N1) Immunization Coverage Rates by Complex and Continuing Care Hospital, Toronto, 2009/2010 Season

Complex and Continuing Care Hospital	Total Staff	pH1N1		Seasonal Flu	
		# Staff Immunized	Staff Coverage Rate (%)	# Staff Immunized	Staff Coverage Rate (%)
Centre for Addiction and Mental Health – Queen St.	1518	1292	85	173	11
Centre for Addiction and Mental Health – College & Russell Site	928	789	85	242	26
Bridgepoint Hospital	1001	745	74	382	38
Bloorview Kids Rehab.	1245	899	72	237	19
Runnymede Healthcare Centre	233	164	70	50	21
West Park Healthcare Centre	847	566	67	250	30
Baycrest Hospital C.C.C.	1234	747	61	169	14
Providence Healthcare Hospital	894	539	60	160	18
Toronto Rehabilitation Institute – Rumsey Centre	110	63	57	28	25
St. John's Rehabilitation Hospital	475	271	57	105	22
McCall Centre for Continuing Care	166	94	57	92	55
Salvation Army Toronto Grace Health Centre	286	156	55	61	21
Toronto Rehabilitation Institute – University Centre	676	318	47	93	14
Toronto Rehabilitation Institute – Hillcrest Centre	194	84	43	29	15
Toronto Rehabilitation Institute – Bickle Centre (Queen Elizabeth Centre)	509	217	43	58	11
Toronto Rehabilitation Institute – Lyndhurst Centre	295	109	37	62	21

Table 2c: Health Care Worker Influenza (Seasonal & pH1N1) Immunization Coverage Rates by Long Term Care Home, Toronto, 2009/2010 Season

Long Term Care Home	Total Staff	pH1N1		Seasonal Flu	
		# Staff Immunized	Staff Coverage Rate (%)	# Staff Immunized	Staff Coverage Rate (%)
Mon Sheong Scarborough Long Term Care Centre	183	178	97	175	96
Hellenic Home for the Aged – Scarborough	100	90	90	90	90
Elm Grove Living Centre Inc.	118	105	89	109	92
Yee Hong Centre for Geriatric Care – McNiccoll Site	172	150	87	156	91
Garden Court Nursing Home	38	29	76	30	79
Yee Hong Centre for Geriatric Care – Scarborough Finch Site	252	192	76	200	79
Tony Stacey Centre for Veteran’s Care Home for the Aged	120	89	74	80	67
Kensington Gardens	330	231	70	191	58
Carefree Lodge	138	95	69	106	77
Belmont House	215	147	68	44	20
Thompson House	122	81	66	20	16
The Heritage Nursing Home	200	131	66	120	60
Fudger House	270	174	64	152	56
Seven Oaks	252	158	63	149	59
Cummer Lodge	432	264	61	288	67
Suomi Koti Nurisng Home Toronto	66	40	61	20	30
Wesburn Manor	199	120	60	117	59
Leisureworld Caregiving Centre – Norfinch	196	117	60	70	36
Bendale Acres	339	199	59	205	60
Lakeshore Lodge	204	118	58	114	56
Sunnybrook Health Sciences Centre Long Term Care	674	380	56	277	41
Leisureworld Caregiving Centre – Rockcliffe	220	122	55	100	45

(Cont'd over)

Table 2c: Health Care Worker Influenza (Seasonal & pH1N1) Immunization Coverage Rates by Long Term Care Home, Toronto, 2009/2010 Season (cont'd from previous page)

Long Term Care Home	Total Staff	pH1N1		Seasonal Flu	
		# Staff Immunized	Staff Coverage Rate (%)	# Staff Immunized	Staff Coverage Rate (%)
The Westbury	220	120	55	81	37
Castleview Wychwood Towers	442	240	54	211	48
Leisureworld Caregiving Centre – St. George	253	128	51	125	49
Kipling Acres	351	176	50	111	32
Extendicare – Guildwood	180	90	50	74	41
Baycrest Hospital - Apotex Centre (LTCH)	1210	577	48	223	18
Villa Colombo	450	214	48	191	42
Tendercare Living Centre – Scarborough	268	125	47	134	50
Lakeside Long Term Care Centre	155	72	46	92	59
Chester Village	220	101	46	102	46
The O'Neill Centre	200	91	46	100	50
Versa Care Centre – Etobicoke	140	60	43	75	54
Casa Verde Retirement Home	240	100	42	100	42
Providence Long Term Care Home	259	107	41	90	35
Leisureworld Caregiving Centre – Lawrence	218	88	40	88	40
Leisureworld Caregiving Centre – Ellesmere	263	104	40	135	51
True Davidson Acres	219	88	40	117	53
North York General Hospital – Senior's Health Centre	237	93	39	98	41
St. Clair O'Connor Community Nursing Home	79	31	39	30	38
Fairview Nursing Home	92	36	39	25	27
Ehatare Nursing Home	40	15	38	27	68
Kennedy Lodge Nursing Home	303	116	38	151	50
Dom Lipa Nursing Home – Etobicoke	95	35	37	34	36

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Table 2c: Health Care Worker Influenza (Seasonal & pH1N1) Immunization Coverage Rates by Long Term Care Home, Toronto, 2009/2010 Season (cont'd from previous page)

Long Term Care Home	Total Staff	pH1N1		Seasonal Flu	
		# Staff Immunized	Staff Coverage Rate (%)	# Staff Immunized	Staff Coverage Rate (%)
Cedarvale Terrace Long Term Care	250	92	37	91	36
Mon Sheong Home for the Aged (Downtown)	140	51	36	83	59
Leisureworld Caregiving Centre Altamont	198	72	36	110	56
Shepherd Lodge Nursing Home	310	110	35	56	18
White Eagle Nursing Home	65	23	35	18	28
The Gibson Long Term Centre	230	81	35	81	35
Extendicare – Scarborough	197	67	34	155	79
The Wexford	186	63	34	132	71
The Village of Humber Heights	217	71	33	57	26
Leisureworld Caregiving Centre – Cheltenham	170	55	32	44	26
Norwood Nursing Home	65	21	32	62	95
Leisureworld Caregiving Centre – Scarborough	308	98	32	95	31
Drs. Paul and John Reikai Centre	120	36	30	75	63
Extendicare – Rouge Valley Nursing Home	280	83	30	117	42
West Park Long Term Care Centre	224	64	29	58	26
Leisureworld Caregiving Centre O'Connor Court	175	50	29	151	86
Nisbet Lodge	132	34	26	50	38
Versa Care Centre – Rexdale	150	38	25	34	23
Trilogy Long Term Care Centre	240	54	23	54	23
Leisureworld Caregiving Centre – O'Connor Gate	179	39	22	85	47
Maynard Nursing Home	90	19	21	53	59
Isabel & Arthur Meighen Health Centre	220	45	20	128	58
Leisureworld Caregiving Centre – Etobicoke	215	42	20	58	27
†Extendicare – Bayview	325	62	19		

†Institution did not submit seasonal influenza data to Toronto Public Health

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Table 2c Health Care Worker Influenza (Seasonal & pH1N1) Immunization Coverage Rates by Long Term Care Home, Toronto, 2009/2010 Season (cont'd from previous page)

Long Term Care Home	Total Staff	pH1N1		Seasonal Flu	
		# Staff Immunized	Staff Coverage Rate (%)	# Staff Immunized	Staff Coverage Rate (%)
Wellesley Central Place	185	35	19	69	37
Yorkview Lifecare Centre	300	55	18	55	18
Labdara Lithuanian Nursing Home	132	24	18	22	17
Vermont Square	170	30	18	160	94
Highbourne Lifecare Centre – Etobicoke	359	57	16	19	5
Harold and Grace Baker Centre	204	32	16	141	69
Ukrainian Canadian Care Centre – North York	212	31	15	21	10
Craiglee Nursing Home – Scarborough	140	20	14	64	46
North Park Nursing Home	99	11	11	27	27
Valley View Residence	198	18	9	2	1
Christie Gardens Apartments and Care	209	18	9	76	36
Central Park Lodge Westside	250	19	8	91	36
Ina Grafton- Gage Home	102	3	3	23	23
Copernicus Lodge	325	5	2	29	9
Ivan Franko Home – Etobicoke	80	0	0	38	48
Hellenic Home Care for the Aged – Toronto	74	0	0	0	0

TPH staff immunization rates are routinely collected for staff who enter healthcare facilities as part of their work, including staff in the Dental and Oral Health Program, the Communicable Disease Liaison Unit (CDLU), the Control of Infectious Diseases and Infection Control (CID/IC) programs. In the 2009/2010 influenza season, 63% of these staff received pH1N1 vaccine and 25% received seasonal flu vaccine.

CONCLUSION

The uptake of pH1N1 influenza vaccine among workers in acute care and complex continuing care hospitals was comparable to rates reported for seasonal flu vaccine in previous seasons; uptake was lower for long-term care facilities. Coverage rates for the seasonal flu vaccine, which was offered later in the season, were much lower than reported in previous seasons.

Despite the increased awareness of influenza immunization in 2009/2010 with the emergence of a pandemic strain, the strong evidence to support the benefits to patients and HCWs, the existence of provincial protocols to increase HCW influenza immunization and the availability of influenza vaccine at no cost, influenza immunization rates among HCWs in Toronto continued to remain low. Perceived barriers that may explain this include: a misperception of the risk of influenza; a lack of knowledge of the potential role HCWs play in influenza transmission; concerns about side effects; a belief that the vaccine is ineffective; fear of injections; and lack of time and motivation to receive the vaccine. In addition, this season was a "different" flu season, with public uncertainties regarding risk of the infection and risk of the vaccines, and some delays in vaccine availability for the smaller long-term care facilities due to vaccine supply and packaging limitations.

A concerted effort to improve HCW immunization against influenza is required. TPH will continue to track and report on HCW immunization rates in Toronto healthcare facilities annually for the next two years.

This report will be circulated to the Chief Medical Officer of Health for Ontario, the CEOs of all Toronto acute care and complex continuing care hospitals, and long term care homes, the CEOs of all Toronto-area Local Health Integration Networks (LHINs) and Regional Infection Control Networks (RICNs), the General Manager of City of Toronto Long-Term Care Homes and Services, the Chief and General Manager of Toronto Emergency Medical Services (EMS), Toronto Practitioners of Infection Control (TPIC), the Ontario Agency for Health Protection and Promotion (OAHPP), all Ontario Boards of Health, the Association of Local Public Health Agencies (alPHA), and the Ontario Public Health Association (OPHA).

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