Influenza Update

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<th>Date:</th>
<th>September 28, 2011</th>
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<td>To:</td>
<td>Board of Health</td>
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<td>From:</td>
<td>Medical Officer of Health</td>
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**SUMMARY**

This report provides an overview of the 2010/11 influenza season, a description of Toronto Public Health's planned activities for the upcoming 2011/12 influenza season, proposed actions to increase influenza immunization rates of health care workers (HCWs) in healthcare facilities, and an update on pandemic influenza preparedness activities.

**Financial Impact**

There are no direct financial impacts flowing from this report.

**DECISION HISTORY**

At its June 1, 2010 meeting, the Board of Health requested that the Medical Officer of Health report annually on the state of pandemic influenza preparedness, incorporating lessons learned from the H1N1 pandemic. Refer to: [http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2010.HL31.2](http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2010.HL31.2)

At its June 7, 2011 meeting, the Board of Health requested that the Medical Officer of Health report back on a plan to increase immunization rates among HCWs in healthcare facilities for the coming influenza season. Refer to: [http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2011.HL5.1](http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2011.HL5.1)

**ISSUE BACKGROUND**

Influenza is a highly contagious respiratory illness caused by a virus which is constantly changing. Influenza viruses are divided into three types, designated A, B, and C. Influenza A viruses are further divided into subtypes based on two viral surface glycoproteins: the hemagglutinin (H) and the neuraminidase (N). Both influenza A and B viruses can cause seasonal outbreaks. The emergence and spread of a new Influenza A virus to which most of
the population have never been exposed can cause an influenza pandemic. Type C influenza is associated with sporadic cases and minor local outbreaks.

Local public health units are mandated to:
- Conduct surveillance for influenza
- Promote and provide provincially-funded immunization for the general public and priority populations
- Investigate reported cases
- Provide information and education to the general public and healthcare workers regarding influenza prevention and control
- Lead the development of a local Pandemic Influenza Plan

Each year Toronto Public Health (TPH) conducts surveillance using a variety of strategies to track local influenza activity. TPH's surveillance efforts are part of the larger provincial, national and global efforts to reduce illness and death due to influenza. Information on influenza activity in Toronto is sent to the MOHLTC which in turn reports to the Public Health Agency of Canada (PHAC). Since the introduction of the Universal Influenza Immunization Program in 2000, the majority of individuals get their influenza vaccine at their physician's office or through their workplace. For those unable to access vaccine at these settings, TPH has conducted community-based influenza immunization clinics across the City, in venues such as shopping malls, City civic centres, homeless shelters and drop-in centres.

The 2010/11 Influenza season and immunization program are described below.

**A. 2010/11 Influenza Activity**

In 2010/11 the City of Toronto experienced its most active non-pandemic influenza season in the past decade (see Figure 1). The total number of cases reported was 1565 and there were 74 confirmed influenza outbreaks in Toronto healthcare facilities. The highest rates of illness were reported in those 65 years of age and older (217.4 per 100,000) and those under five years of age (184.8 per 100,000) (see Figure 2).

The season peaked the week of December 26, 2010 to January 1, 2011, which is earlier in the season than has been observed previously in Toronto. This peak in influenza activity, occurring during the December holiday period, placed a substantial stress on Toronto’s hospital emergency departments.
Figure 1: Number of reported lab confirmed influenza cases by episode week and season

Figure 2: Number and rate of reported lab-confirmed influenza cases by age group
Toronto, September 01, 2010 to August 31, 2011.

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS), extracted September 2011
Over half of the cases (873 people) reported to TPH were hospitalized and 5% of all reported cases died (76 cases), which was higher than the hospitalization and death rates for the previous five years. The increased proportion of older individuals reported with influenza this past season likely accounted for the higher frequency of hospitalization and death compared to previous years. The average age of hospitalized and fatal cases (60 and 79 years of age respectively), was higher than for all reported cases (53 years of age).

The 2010/11 vaccine was a good match with the types of influenza virus that were seen in Toronto this past season. The most common influenza type detected during the 2010/11 season was Influenza A (H3) (see Table 1). The National Microbiology Laboratory (NML) in Winnipeg identified that the Influenza A types circulating were A/Perth/16/2009-like (H3N2) and Pandemic H1N1 A/California/07/2009-like. Protection against both of these types was included in the 2010/11 influenza vaccine. Thirteen percent of reported cases were infected with Influenza B (B/Brisbane/60/2008-like virus), which was also included in the 2010/11 vaccine.

### Table 1. Number of lab-confirmed influenza cases by age group. Toronto, comparison of 2010/2011 season to the previous, no H1N1 pandemic, 5-year mean (2004/2005 - 2008/2009*) and to the H1N1 pandemic cases.

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<tbody>
<tr>
<td></td>
<td>Number of cases (%)</td>
<td>Rate†</td>
<td>Number of cases (%)</td>
</tr>
<tr>
<td>&lt;5</td>
<td>266 (17)</td>
<td>184.4</td>
<td>204 (24)</td>
</tr>
<tr>
<td>5 to 14</td>
<td>101 (6)</td>
<td>37.7</td>
<td>109 (13)</td>
</tr>
<tr>
<td>15 to 24</td>
<td>34 (2)</td>
<td>9.9</td>
<td>44 (5)</td>
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<tr>
<td>25 to 44</td>
<td>178 (11)</td>
<td>20.4</td>
<td>110 (13)</td>
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<tr>
<td>45 to 64</td>
<td>194 (12)</td>
<td>28.3</td>
<td>85 (10)</td>
</tr>
<tr>
<td>65+</td>
<td>792 (51)</td>
<td>217.4</td>
<td>293 (35)</td>
</tr>
<tr>
<td>Unknown</td>
<td>0 (0)</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1565 (100)</td>
<td>58.4</td>
<td>845 (100)</td>
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* 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 2011

### B. 2010/11 Community Influenza Immunization Campaign

The community's response to the 2010/11 influenza season was impacted by its experience during the 2009 H1N1 influenza pandemic. Uptake of the vaccine in October/November 2010 was lower compared to past non-pandemic seasons, but public demand for the vaccine increased significantly once substantial influenza activity was detected in Toronto.

TPH conducted a total of 101 influenza immunization clinics at 43 different sites across Toronto between October 2010 and January 2011. This included the addition of 11 clinics in January 2011 in response to the unprecedented peak in influenza activity that occurred during the holiday period and the good match between circulating types of influenza viruses and the 2010/11 vaccine (See Figure 3). TPH immunized a total of 34,453 individuals at community clinics.
TPH and Toronto Emergency Medical Services (TEMS) have been partners in the provision of influenza vaccine to homeless and under-housed individuals at the City's drop-in centres and homeless shelters since the UIIP began. During the 2010-2011 influenza season, the two organizations conducted a total of 36 clinics serving the homeless and under-housed population and vaccinated 1149 clients.

C. Influenza Immunization Rates among Health Care Workers (HCWs)

Since the 2007/2008 influenza season TPH has been publicly reporting on influenza immunization rates among HCWs in Toronto healthcare facilities. The rates have remained low despite targeted efforts to increase them. This situation is not unique to Toronto. Despite decades of recommendations and efforts to increase immunization rates, large numbers of HCWs have chosen not to be immunized.

(CDC; National Foundation for Infectious Diseases, 2007), leading many experts and organizations to support mandatory influenza immunization of HCWs (Talbot et al, 2010).
The “Influenza Immunization Rates of Healthcare Workers in Toronto Healthcare Facilities” report presented at the June 7, 2011 Board of Health meeting indicated that for the 2010/11 influenza season, the median influenza immunization coverage rate among HCWs in Toronto was 37% for acute care facilities (ACFs), 38% for complex continuing care facilities (CCCs), and 58% among long-term care homes (LTCHs). The median coverage rates in Toronto ACFs and CCCs were below Ontario rates, while the LTCH rates were comparable to Ontario rates.

Annually, TPH promotes influenza immunization of Toronto HCWs by distributing MOHLTC influenza immunization materials to each healthcare facility, and offering to assist facilities with staff education and promotion of their campaigns. In addition, TPH shares Toronto's HCW immunization coverage rates by facility with all healthcare facilities.

D. Pandemic Influenza Planning and Preparedness

Since 2001 TPH has been developing and updating the Toronto Public Health Pandemic Influenza Plan, working closely with the City of Toronto, local healthcare system partners, other stakeholders and the MOHLTC. In 2009, Toronto and the rest of the world experienced a pandemic of H1N1 influenza. TPH responded to this event and conducted a detailed evaluation of the response which identified lessons learned and made a number of recommendations. TPH has continued to work with internal and external partners, both locally and provincially, to strengthen our preparedness.

COMMENTS

TPH activities planned for the 2011/12 influenza season are described below.

A. Influenza Surveillance for 2011/12

TPH will conduct surveillance in order to detect the arrival of influenza in the City, confirm the types of influenza virus that are circulating, watch for any change in the severity of illness associated with the virus and identify which groups are most affected by the year's circulating strain(s).

TPH collects, collates, analyses and disseminates data from the following sources:

- Reportable disease notifications from laboratories and clinicians.
- Institutional (Long-Term Care Homes (LTCHs) and hospitals) respiratory outbreak notifications
- Syndromic Surveillance, using chief complaint data, from select Toronto hospital emergency departments (ED). TPH has been working with the TC-LHIN and interested hospitals to support increased Toronto hospital participation in syndromic surveillance.
- School-based absenteeism from both the Toronto District School Board and the Toronto Catholic District School Board
- Employee absenteeism from a large Toronto public service program
In addition, TPH actively monitors the following:

- Global scan of influenza activity in neighbouring health regions, the rest of Canada and other nations (e.g. HealthMap, CIOSC, PROMED)
- Weekly summaries of respiratory tests submitted and percent positivity for influenza from the Public Health Ontario weekly Laboratory-Based Respiratory Pathogen Surveillance Report
- Sentinel physician influenza-like illness (ILI) counts from the Flu Watch program coordinated by the Public Health Agency of Canada

TPH reports on these indicators weekly in its Influenza Bulletin which is produced after the first case of influenza is reported in the City (usually in October) until May of the following year. The report is posted on the TPH website.

TPH also issues surveillance alerts to hospitals, LTCHs and community physicians during the influenza season to notify them of changes in the epidemiology of influenza in Toronto, and to remind them to immunize themselves and their patients.

As of September 28, 2011, no confirmed cases of influenza have been reported in Toronto.

B. 2011/12 Community Influenza Immunization Campaign

2011/12 Influenza Vaccine
The 2011/12 influenza vaccine will contain the same three types of influenza virus as in 2010/11 (Influenza A (H3), Influenza A (H1) – pandemic type and Influenza B). It is still important to receive the 2011/12 vaccine, even if the individual was vaccinated last year. The protection from the vaccine declines over time and is likely gone by the end of the influenza season; therefore, for best protection, it is important for people to get vaccinated each year.

2011/12 Community Influenza Immunization Clinics
This season, TPH will be offering 46 community influenza immunization clinics (42 in October/November and four clinics in January 2012 as catch-up). Clinics will once again be at shopping malls and City civic centre sites. Based on lessons learned from H1N1, TPH will be conducting fewer but larger clinics, primarily on Thursday and Friday evenings and Saturdays, with the capacity to immunize the same number of people overall as in previous years. A growing number of locations in our community such as pharmacies, physician offices and workplaces are also offering increased access to the influenza vaccine.

As well, TPH will once again conduct approximately 25 influenza immunization clinics at shelters and drop-in locations throughout the City, aiming to immunize up to 1000 homeless and under-housed clients and staff during the months of October and November. Our partner, TEMS, is planning 10 clinics to serve this population for the upcoming influenza season.

Promotion of 2011/2012 Community Influenza Immunization Campaign
To promote TPH clinics, a poster is provided to every elementary school student and circulated in all schools, community centres and libraries showing the clinic locations.
times and dates. Advertisements are placed in local newspapers including community and ethnic/language-specific newspapers to ensure that all Toronto residents are aware of the campaign. Through the TPH website, information on influenza (both the disease and the vaccine) is provided to the public (translated into 14 different languages) and health care providers.

The Ministry of Health and Long-Term Care (MOHLTC) is planning a multimedia promotional campaign to support this year's UIIP. During the 2010/2011 season, the MOHLTC focused on raising awareness of hand washing and reducing the spread of influenza through cough etiquette. This year it will focus on promoting the vaccine as the best way of reducing the risk of being infected with influenza through television advertisement, posters and pop-up advertisements on web pages. Infection prevention and control messages will remain one component of their campaign.

C. Increasing Influenza Immunization Rates among Healthcare Workers

TPH plans to increase influenza immunization rates among HCWs in Toronto healthcare facilities for the 2011/12 influenza season utilizing the following strategies:

- A social marketing campaign targeting HCWs that will include the development of a specific page on TPH’s Health Professionals website, a video, a poster, and ready-made inserts for facility newsletters. The material will be downloadable from the website. The campaign will also include social media engagement strategies (ie., Twitter and Facebook). The campaign will be launched via a letter to all Toronto healthcare facilities and Local Health Integration Network’s CEOs inviting them to participate in a recognition event. The recognition event will be targeted to those facilities with the highest and those facilities with the most improved HCW influenza immunization rates for each of the three facility categories (i.e., ACF, CCC and LTCH). CEOs of the winning facilities will be invited to receive their awards from the Board of Health Chair and Medical Officer of Health at a Board of Health meeting in the spring of 2012.

- The Medical Office of Health will ask the Ontario Medical Association (OMA) and Registered Nurses’ Association of Ontario (RNAO) to send a strong and clear message to their membership recommending annual influenza immunization.

- The influenza Surveillance Alert which will be sent to Toronto physicians to advise them when the influenza season has commenced will include a reminder for them to receive their influenza immunization.

- An article entitled “Improving HCWs Influenza Immunization Rates” will be included in the fall issue of the Communiqué newsletter for physicians.

- Advocating with the MOHLTC to include an emphasis on the importance of influenza immunization of HCWs in their upcoming influenza immunization campaign.
D. Annual Update - Pandemic Influenza Planning and Preparedness

1. Surveillance Update

The World Health Organization (WHO) continues to conduct surveillance and report on circulating strains of influenza with pandemic potential. On August 2010, the WHO moved its pandemic alert phase to post pandemic for H1N1 influenza.

The WHO pandemic alert phase for H5N1 avian influenza has been phase 3 for several years. This means that there are cases of human infection(s) with a new subtype, H5N1, but no human-to-human spread or, at most, rare instances of spread to a close contact. There is currently no pandemic or highly pathogenic H5N1 avian influenza in North America. In 2011, four countries have reported a total of 49 human cases of H5N1, with a case fatality rate of 50%; twelve countries have reported H5N1 outbreaks among poultry or wild birds.

The WHO is updating its pandemic preparedness plan, including reconsideration of the phases in order to account for severity of illness.

2. Federal and Provincial Updates

The Public Health Agency of Canada (PHAC) and Health Canada are working towards implementation of recommendations from a report entitled "Lessons Learned Review: The Public Health Agency of Canada and Health Canada Response to the 2009 H1N1 Pandemic". PHAC is renewing procurement contracts to ensure Canadians have timely access to influenza vaccine during a pandemic.

On May 4, 2011 amendments to the Ontario Health Protection and Promotion Act received Royal Assent. The amendments provide the Chief Medical Officer of Health (CMOH) new authority to direct boards of health and Medical Officers of Health to adopt measures during a pandemic or other public health emergencies and to use publicly owned spaces for public health purposes. The MOHLTC is working with partners to implement next steps identified in the CMOHs report entitled "Pandemic (H1N1) 2009: A Review of Ontario's Response", as well as update the Ontario Health Plan for an Influenza Pandemic (OHPIP). TPH has representatives on the OHPIP Steering Committee and some of the working groups (Immunization; Influenza Assessment, Treatment and Referral; and Public Health Measures).

3. Toronto Public Health

TPH updated the Toronto Public Health Pandemic Influenza Plan (TPHPIP) in 2010. The revised plan focuses on TPH response activities during a pandemic. It is available on the TPH website at:

The TPH Pandemic Influenza Advisory Group has been re-established as the Toronto Health Emergency Advisory Group (THEAG). THEAG provides advice and input to TPH for emergency planning and during health emergencies. THEAG meets quarterly and membership includes representatives from across the health-care sector including the Board
of Health; hospitals; LTCHs; community health including mental health, primary care physicians and Community Health Centres; Emergency Medical Services; Toronto Central Local Health Integration Network; Toronto Central Community Care Access Centre; medical laboratories and funeral homes.

Key activities in 2011 include:

- Implementing the lessons learned and recommendations from the 2009 H1N1 pandemic response evaluation.
- Developing support tools and documents for TPHPIP (e.g. policies and procedures on staff redeployment, sample forms)
- Assigning and training all non-union staff for Incident Management System (IMS) roles
- Fit testing all TPH staff and management for N95 Respirators
- Updating the mass immunization clinic plan

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**SIGNATURE**

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REFERENCES

