



TORONTO STAFF REPORT

July 11, 2000

To: Board of Health
From: Dr. Sheela V. Basrur, Medical Officer of Health
Subject: Influenza Immunization For City of Toronto Employees

Purpose:

To report on options for influenza immunization of City of Toronto employees.

Financial Implications and Impact Statement :

The financial impact of providing influenza immunization to City employees involves the cost of providing immunization clinics at City worksites and the cost of providing vaccine for those employees who are not eligible to receive it free from the Province.

The cost of administering influenza immunization for city employees (excluding City Agencies, Boards and Commissions) is estimated at approximately \$187,064 annually. Funds for this program are not included in the approved allocation for Employee Health Services, Corporate Services budget and cannot be absorbed within the approved allocation.

Influenza prevention in the 2000/2001 winter season will require employee immunization and associated expenditure of funds beginning in the fall of 2000. Funds for this purpose can be provided on a one-time only basis through a reallocation of under-expenditures in the Public Health Program. Ongoing expenses for this initiative should be considered in the 2001 operating budget process for Employee Health Services. Provincial cost-sharing for this initiative will be sought.

The Chief Financial Officer and Treasurer has reviewed this report and concurs with the financial impact statement.

Recommendations:

It is recommended that:

- (1) The City of Toronto Employee Health Services offer influenza vaccination at no charge to all city employees beginning in the fall of 2000;
- (2) Employee Health Services contract out the provision of on-site influenza immunization clinics across the city;
- (3) City Council approve the expenditure of \$187,064 to provide influenza immunization to City employees;
- (4) The estimated cost of this program be absorbed within the 2000 approved Operating Budget within Public Health and that a report be submitted to the Policy and Finance Committee on details of this expenditure and the under-expenditures in 2000 that may be re-allocated for this purpose, as part of the 2000 Operating Budget Variance reporting process;
- (5) The Board of Health urge the Ontario Ministry of Health to include influenza vaccination for municipal employees in its Mandatory Health Programs and Services Guidelines, and that the Ministry of Health provide free influenza vaccine for this purpose and 50:50 cost-sharing of immunization expenses;
- (6) The Board of Health refer this report to Policy and Finance Committee for its consideration;
- (7) The Board of Health refer this report to the Occupational Health and Safety Communicable Disease Control Policy Workgroup for information; and
- (8) The appropriate City officials be authorized and directed to take the necessary action to give effect thereto.

Background:

In early 2000 the Board of Health requested a report on the options for influenza immunization for City of Toronto employees. This report has been prepared in consultation with Employee Health Services and the Finance Department, Benefits and Employee Services section.

Epidemic influenza is caused primarily by influenza A and B viruses and occurs in Canada every year, generally during late fall and winter. Although many other respiratory viruses can cause influenza-like illness during the year, influenza virus is usually the predominant cause of serious respiratory disease in a community due to the rapidity with which epidemics evolve, the widespread morbidity and the seriousness of complications, notably viral and bacterial pneumonias.

According to the Ontario Ministry of Health and Long-Term Care, annual vaccination every autumn of people at high risk is the single most important measure to reduce the impact of influenza. People eligible for free influenza immunization include adults and children with chronic cardiac or pulmonary disorders severe enough to require regular medical follow-up, all residents and staff in homes for the aged, nursing homes, chronic care facilities/units and retirement homes where care/assistance in the activities of daily living is provided, people 65 years of age and over, adults and children with chronic conditions such as diabetes mellitus, cancer, HIV, and children and adolescents with conditions treated for long periods with acetylsalicylic acid (ASA).

In December 1999, in an attempt to reduce the spread of influenza, the Ontario Ministry of Health and Long Term Care expanded the criteria for people eligible for publicly funded influenza vaccine to include the following employee groups:

- (1) Staff of acute care hospitals.
- (2) Emergency service workers – fire, police and ambulance.
- (3) Home care workers.
- (4) Public Health Unit staff.
- (5) Other health care providers working in institutions or the community.

Influenza Immunization For Employees

Healthy adults are not immune from contracting influenza and, although they are seldom hospitalized, they can experience dry cough, fever, muscle aches, headache and sore throat. In some cases complications can occur resulting in pneumonia, bronchitis, sinusitis and the exacerbation of chronic medical conditions. In the workplace, ill employees are often unable to come to work because they are sick for up to one week. Performance may be affected for up to one month after the employee has returned to work. As well, co-workers may contract influenza because it is so easily transmitted.

Several studies have examined the economic benefits of offering an employee influenza immunization program. One study, conducted in 1976 at Northern Telecom in Belleville, Ontario, achieved a savings of \$60,000 (not including nursing time for vaccine administration). Only 173 work days were lost due to influenza compared to 930 work days the previous year. Another study conducted in the 1994-95 influenza season at the Hanford nuclear reservation in Washington State identified the potential lost work days avoided for influenza illness to be 27.65 per 100 employees over a 6 month period. A study measuring the outcomes of influenza immunization on working adults in the Minneapolis areas was also conducted during the same influenza season and reported similar findings. Vaccinated employees in this study reported 43% fewer sick leave days associated with upper respiratory illness as compared to their cohorts of unvaccinated employees.

A study conducted in North Carolina in 1992-93 found that significantly fewer vaccinated workers had influenza-like illness (20%) than non vaccinated workers (49%) and fewer vaccinated workers reported lost workdays (11%) compared to non-vaccinated workers (24%).

A study of visiting homemakers in Helsinki, Finland, conducted in 1990-91 found that the cost effectiveness of employee influenza vaccination programs is strongly influenced by the time lost from work as a result of going to obtain the vaccination. Vaccination programs should, therefore, be organized to minimize loss of working time.

In 1994 the City of Mississauga conducted a pilot project offering influenza vaccine to its Transit Operators. This study demonstrated that the immunized group of employees had fewer days absent from work because of illness than the non-immunized group. This resulted in a savings of 5.25 hours per employee over a 6 month period .

Employee Influenza Immunization in Municipalities

Prior to amalgamation, municipalities in the former Metro Toronto offered a variety of programs for free employee influenza immunization (See Table 1). In East York, Etobicoke and North York the costs for this program were minimal and were absorbed within Public Health budgets. In the redesign of the Vaccine Preventable Disease Program, priority was given to the delivery of the minimum mandatory programs which do not include the provision of Influenza Immunization to municipal employees.

Table 1
Employee Influenza Immunization Offered by Former
Seven Municipalities Prior To Amalgamation

Employee Flu Shots Offered	East York	Etobicoke	North York	Scarborough	Toronto	York	Metro
All Employees					✓		✓
Public Health Unit Employees	✓	✓	✓				
Emergency Service workers	✓						
Administered by:	Public Health	Public Health	Public Health	N/A	Employee Health	N/A	Employee Health
On-Site Clinics	✓	Civic Centre	Civic Centre	N/A	✓	N/A	✓

Other municipalities in Ontario have been conducting free employee flu immunization clinics (see Table 2). This past flu season the Regional Municipality of Peel conducted an on-site influenza immunization program for all employees in the region. In Halton, all employees are offered free flu shots on site and the cost of the vaccine is covered by the insurance carrier.

Two other municipalities in Ontario that were surveyed have offered on site influenza immunization clinics only to public health employees. In the Region of Hamilton-Wentworth, public health employees who are in contact with high risk populations received free flu shots, while in Ottawa-Carlton, all public health staff were offered on site influenza immunization.

Outside of Ontario (see Table 2), Vancouver offers an employee flu immunization program that is administered by the Employee Health & Safety Division and is paid for through a corporate

budget account. In Edmonton, based on a cost benefits proposal, an influenza immunization program is offered to city staff through Employee Health Services. Most city departments participate at an estimated cost of \$10.00/employee immunized, which is paid to Employee Health. Approximately 50% of emergency service workers participate and 25% to 50% of employees in other departments are. New York City also offers free influenza immunization to city employees and this program is managed by the health department.

Table 2
Influenza Immunization Offered to Employees By Municipalities Outside Toronto

Employee Flu Shots Offered	Peel	Halton	Hamilton-Wentworth	Ottawa-Carlton	Edmonton	Vancouver	New York City
All Employees	✓	✓			✓	✓	✓
Public Health Unit Employees			✓	✓			
Emergency Service Workers							
Administered by:	Employee Health	Public Health	Public Health	Employee Health	Employee Health	Employee Health	Public Health

This past flu season, City of Toronto Employee Health Services (through a contracted nursing agency) and Homes for the Aged offered on-site clinics to 3,000 employees at Homes for the Aged, achieving an excellent coverage rate of 87%. This employee group was given highest priority since they are working with a vulnerable elderly population. Clinics were also offered through Employee Health Services to fire fighters, ambulance workers and selected public health staff who work in high-risk settings, but only 1,282 of the 4206 eligible employees were immunized through these clinics. The lower immunization rate among these groups may be due to the limited amount of time that was available to promote this program and the inadequate resources to conduct a sufficient number of on-site clinics to these employee groups.

Comments:

Studies have shown that immunizing employees against influenza can save corporations money by reducing sick time and improving productivity. However, the cost effectiveness of implementing an employee flu immunization program depends on three factors:

- (a) The match between the circulating influenza virus and the components of the vaccine for the flu season. The influenza vaccine is developed each year based on the circulating strain emerging in the late winter of the previous year.
- (b) The incidence of influenza in the community. Public Health experts world wide have identified that an influenza pandemic will occur, however when it will occur cannot be predicted. It is estimated that 75% of Ontarians will be infected with influenza in a pandemic. One strategy to reduce the impact of a pandemic is to increase the number of people who annually receive flu shots. In addition, Toronto experiences a significant epidemic of influenza each year. In 1999-2000, a total of 57 outbreaks and 315 cases were reported. However, it is known that influenza is frequently underreported.

- (c) The amount of employee work time taken to receive the vaccine. This can be reduced by providing on-site immunization clinics. In two previous Toronto municipalities (see Table 1) and in other large jurisdictions such as Peel, Edmonton and Vancouver (see Table 2), Employee Health Services administered the employee Influenza Immunization programs. This approach fits within the current City of Toronto Employee Health Services mandate. Although Employee Health Services does not have adequate resources to provide the staff to immunize City of Toronto employees, with additional funding they would be able to contract the nursing services for on-site clinics, and provide the overall co-ordination and management of the program.

There are two categories of employees to consider for influenza immunization: Those employees working with high risk groups (including Homes for the Aged staff, public health staff and emergency service workers) and all other employees.

Employees Working With High Risk Groups

This employee group is eligible for free influenza vaccine through the Ontario Ministry of Health and Long Term Care. In addition, Homes for the Aged staff and certain public health employees are required to be immunized (unless the employee has a medical or philosophical exemption) because they are working in settings with the elderly who are at increased risk of complications from influenza. While these employees could go to their physicians to be immunized, experience within this organization, as well as other health care facilities, has demonstrated that influenza immunization coverage increases dramatically when on-site clinics are available. The cost per employee for influenza immunization is estimated at \$7 per employee (vaccine is paid for by Ontario Ministry of Health and Long-Term Care) for a total estimated cost of \$58,324 (see Table 3).

All Other Employees

The main justification for offering influenza immunization to all other city employees is the significant potential savings to the corporation by reducing employee absenteeism throughout the flu season. In addition, this would be seen as a health benefit for employees and a positive way to promote their health. Based on cost savings estimates prepared by the City of Edmonton, if 100% of City of Toronto employees were immunized against influenza at a cost of \$315,804, the corporation could achieve a net savings of \$8,736,713. This is derived from a City of Edmonton estimate that the average number of short term disability hours taken during the influenza season is 10.15 hours per employee multiplied by 34,080 City of Toronto employees earning an average hourly rate of \$26.17. The cost per employee for influenza immunization was estimated at \$10.00/employee.

Based on the assumption that 100% of employees working with high risk groups will receive influenza immunization and 50% of other employees will be immunized, the cost to the City of Toronto is estimated at \$187,064 (see Table 3), achieving an estimated cost savings of \$5,445,790. (The cost of materials and supplies, including vaccine, is estimated at \$86,049 and the cost of contracted services for vaccine administration is estimated at \$101,015).

Table 3
Estimated Costs for Employee Influenza Immunization Program

Employee Category	Number of Employees	Associated Dollar Value
100% of Employees Working With High Risk Groups including: ➤ Homes for the Aged ➤ Fire ➤ Public Health ➤ Ambulance	8,332	\$58,324
50% of All Other Employees	12,874	\$128,740
Total	21,206	\$187,064

In the first year of its influenza immunization program the former City of Toronto charged employees for the cost of the vaccine. In subsequent years all costs were covered by the city. Other municipalities contacted do not charge employees for influenza immunization. While cost recovery from employees is an option, it may be a deterrent to staff immunization against influenza, decreasing coverage and the effectiveness of the program.

Influenza vaccine is not covered through the City's benefit plans.

Conclusions:

Employees working in settings with high risk groups should receive influenza immunization by City of Toronto Employee Health Services. As many of these staff are required to be immunized (unless they have a medical or philosophical exemption) to work with the elderly and other high risk populations and the vaccine is provided free by the Ontario Ministry of Health and Long Term Care, providing on-site clinics will minimize employee time taken to receive the vaccine and will increase the influenza immunization coverage in this population. Furthermore, vaccinating these groups will decrease the incidence of influenza illness, reducing the number of number of hospitalizations and emergency room visits among the high risk groups that they serve.

Providing influenza immunization to all other city employees will potentially achieve significant cost savings for the City of Toronto through reduced sick time as well as providing a health benefit to employees. Offering on-site clinics for employees will increase net savings by reducing time taken to be vaccinated and increase compliance, thereby decreasing the incidence of influenza in the workforce. Since it is anticipated that no more than 50% of the workforce will request immunization the costs should be calculated for purchasing vaccine and nursing time for 50% of city employees.

This program should be funded in such a way that the cost of implementation will not impede a division's ability to offer this program to their employees, particularly in divisions that require employees to be immunized against influenza to prevent the spread of the disease to their clients.

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