Public Health Services

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SUMMARY REPORT: INFLUENZA SEASON 2005-2006

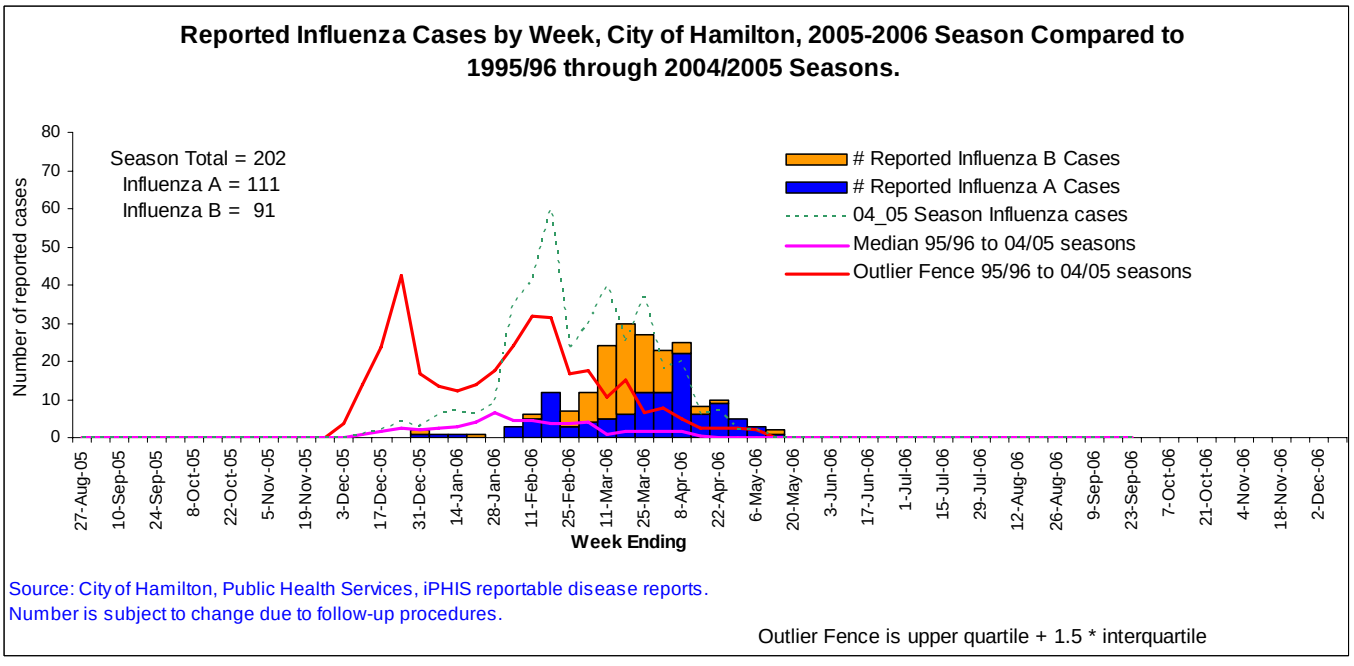
***Sources of data**: RDIS and iPHIS, City of Hamilton*
Rapid Risk Factor Surveillance System (RRFS), City of Hamilton
Flu Watch, Public Health Agency of Canada

Influenza is monitored in the City of Hamilton using the following data:

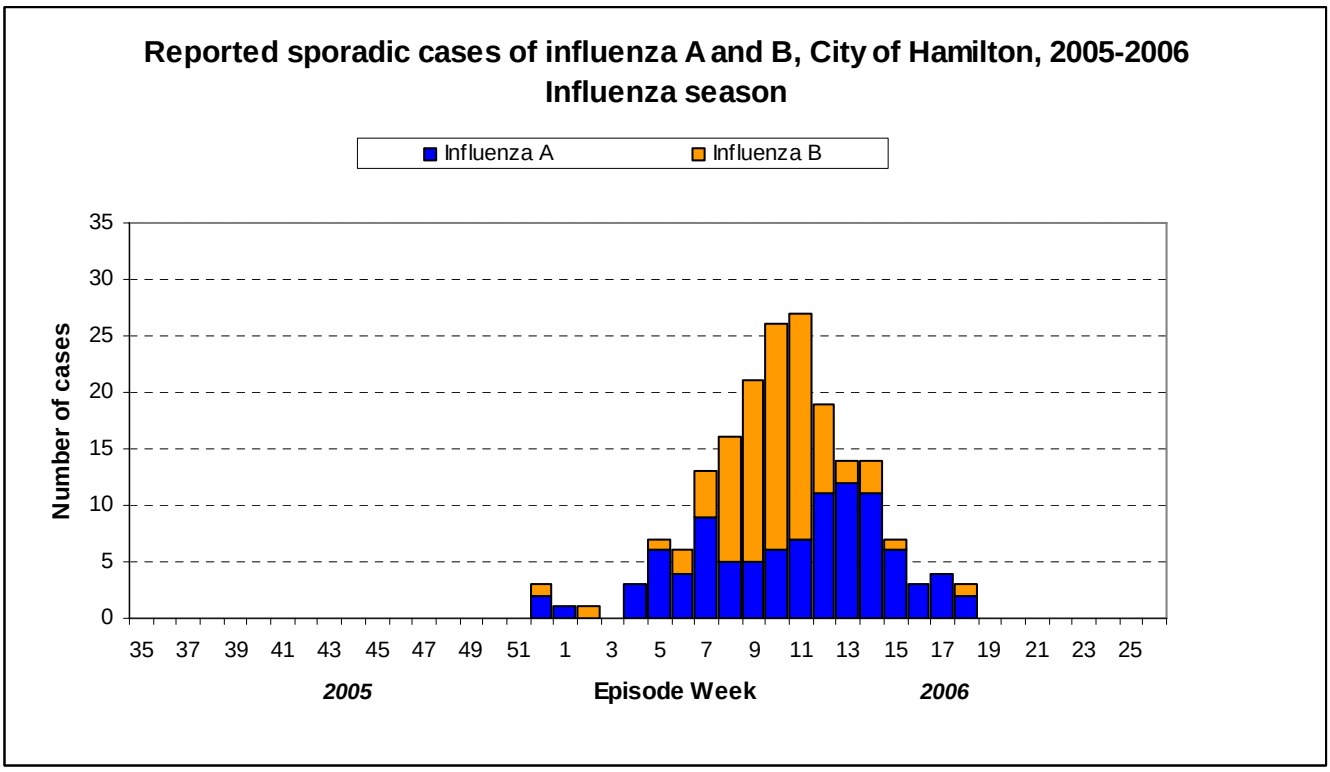
- Influenza-like illness in patients at sentinel physician practices
- Absenteeism in schools and workplaces in the City of Hamilton
- Outbreaks of influenza in residential institutions
- Results of laboratory testing of submitted samples from patients: rate of positive results and notification of laboratory confirmed influenza cases
- Results of subtyping of isolates for identification of strains

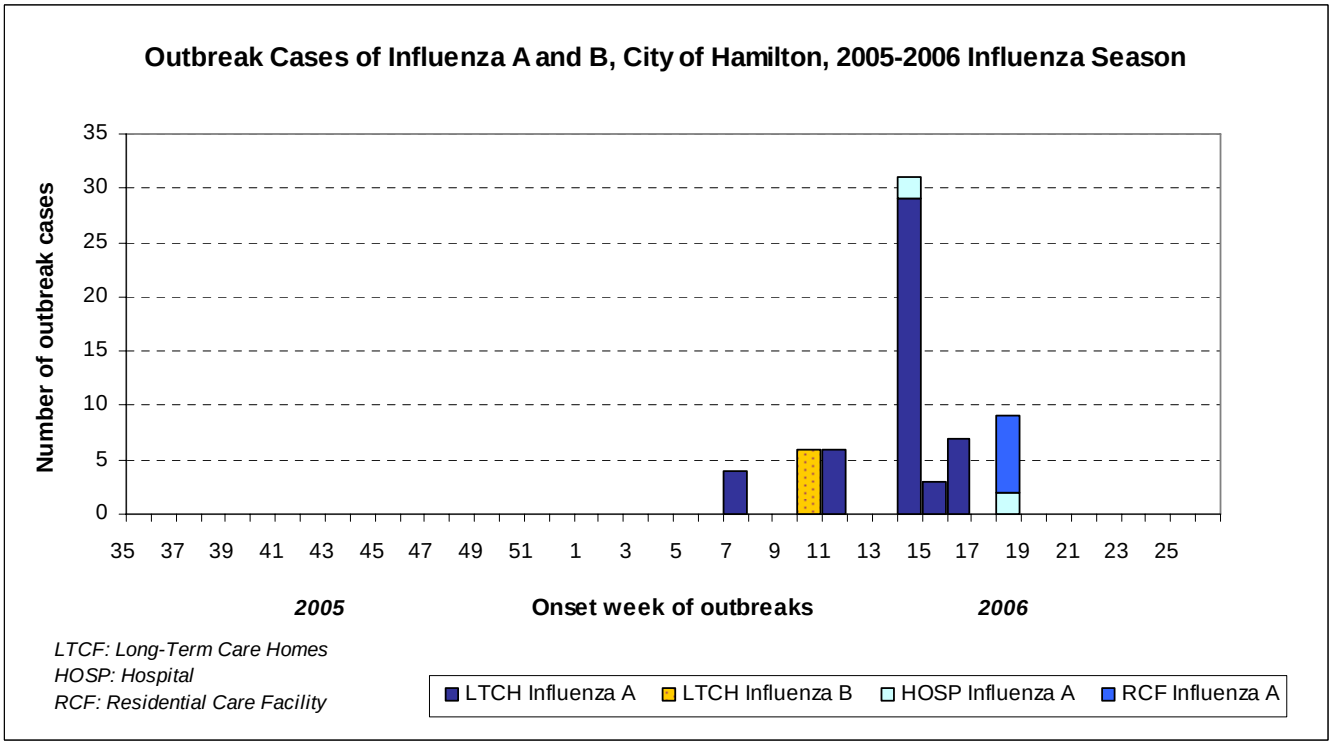
Overview of 2005 to 2006 influenza season, City of Hamilton

A total of 202 cases of influenza were reported in the City of Hamilton during the 2005-2006 influenza season. Of the 202 isolates from these cases, 111 (55.0%) were identified as Influenza A, and 91 (45.0%) were Influenza B. The 2005-2006 peak in reported cases occurred approximately one month later than the 2004-2005 peak. In addition, the number of reported cases in most months, as well as overall, was higher than the upper expected number of cases reported for those months during previous years (1995/96 to 2004/05 seasons).



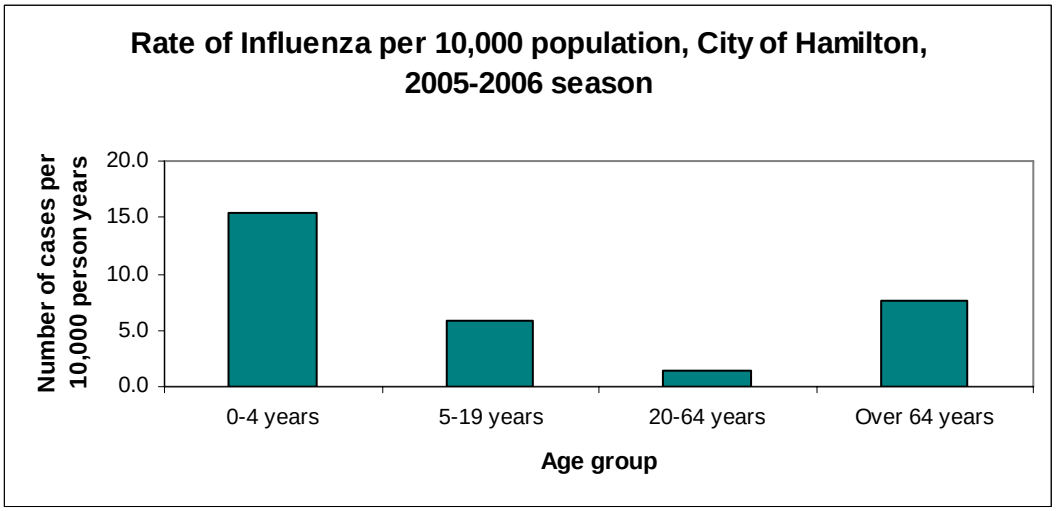
Of the reported influenza cases, the majority were sporadic (non-outbreak-related) cases. However, whereas Influenza B was identified as the cause of illness in nearly half (48.4%) of the sporadic reported cases, only one outbreak, involving 6 cases, was caused by Influenza B. Influenza A was identified as the cause of the majority of the outbreaks.





[*Source: iPHIS, City of Hamilton Public Health Services*]

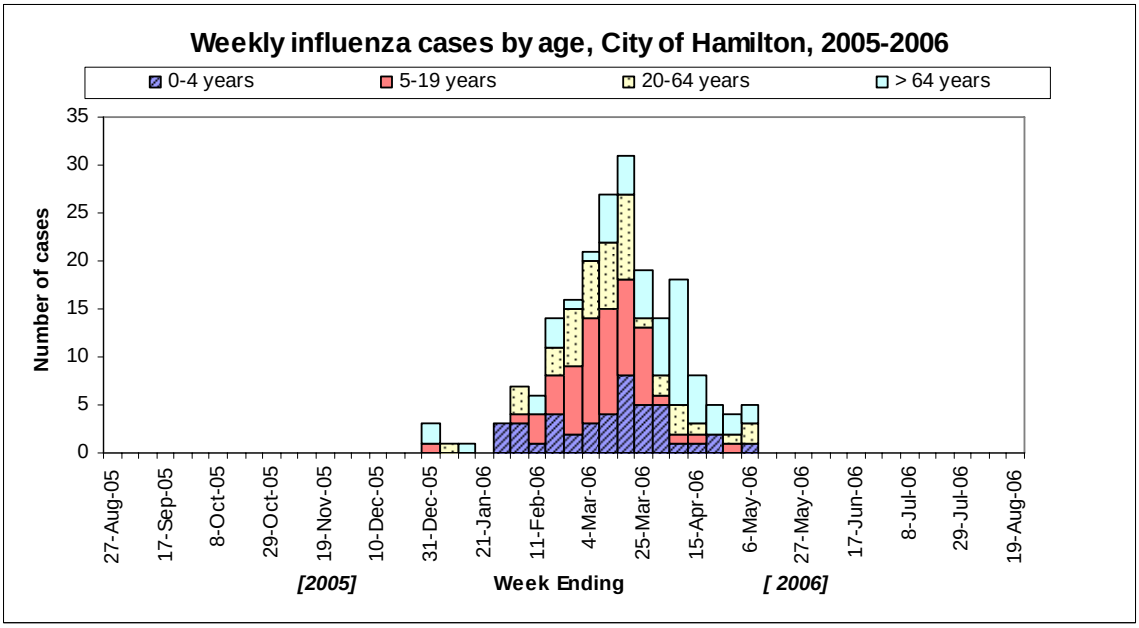
Approximately half (49%) of the reported cases were male, while 51% were female. The largest proportion of reported cases occurred in persons 5 to 19 years old. However, age-specific rates of influenza were highest in children 0 to 4 years old, and in adults over 64 years of age.



Source of Population estimates: Ministry of Finance, PHPDB estimates for 2003.

Age Group	Percentage of reported cases
0-4 years	21%
5-19 years	30%
20-64 years	22%
Over 64 years	27%

Weekly numbers of reported influenza cases in each age group are summarized in the chart below:



Influenza-like Illness

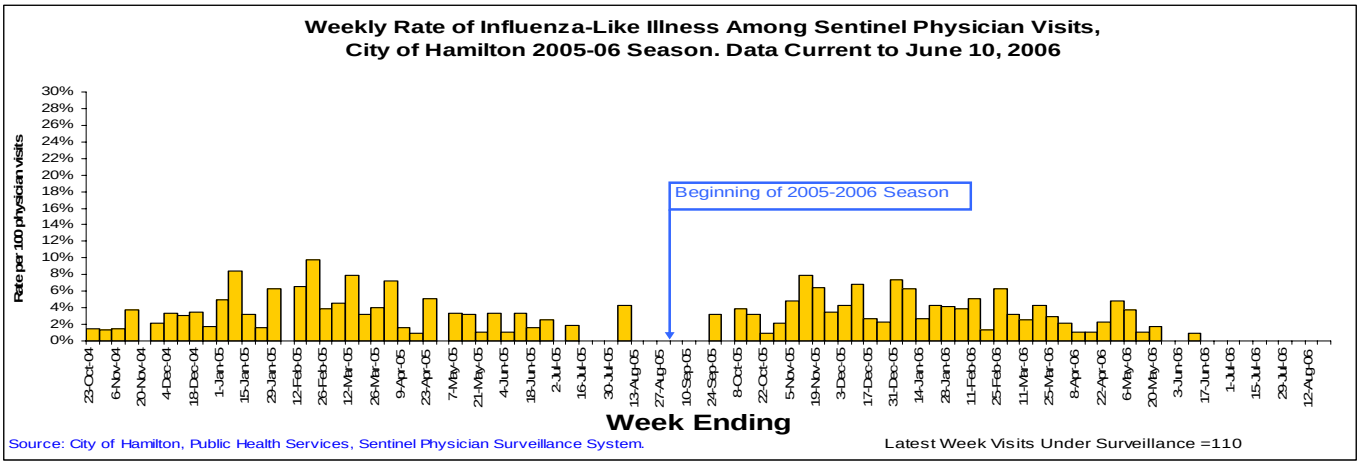
For the purposes of influenza surveillance, influenza-like illness (ILI) in the general population is defined as:

- Acute onset of respiratory illness with fever and cough and with one or more of the following:
  - Sore throat
  - Myalgia
  - Arthralgia
  - Prostration
- In children under 5 years of age, gastrointestinal symptoms may be present
- Fever may not be prominent in persons less than 5 years of age or over 65

(Source: FluWatch 2006-06-16)

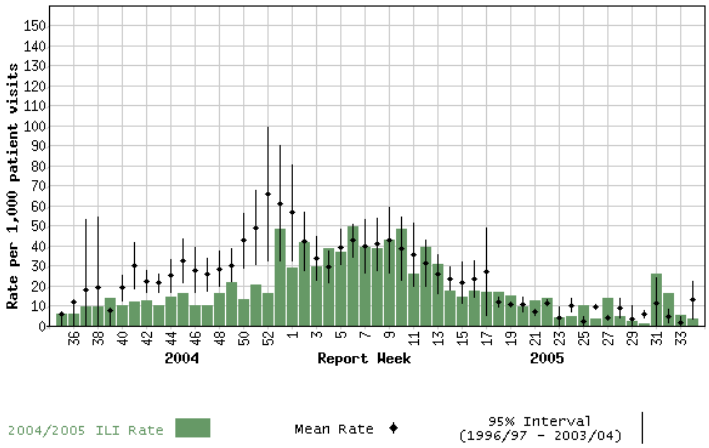
The occurrence of ILI is recorded as the rate of ILI per 1000 patient visits (or as a percentage of patient visits) to sentinel physician practices.

In the City of Hamilton, rates of influenza-like illness (ILI) among patients visiting sentinel physician's offices were recorded on a weekly basis. The 2005-2006 influenza season saw an apparent decrease in the ILI rates during the peak months of the season (November 2005 to February 2006), in comparison with the peak months of the 2004-2005 influenza season. The highest reported rates of ILI occurred in November 2005 to January 2006, whereas the highest rates of ILI reported for Canada as a whole occurred a few months later, in weeks 10 to 16 of 2006. However, numbers of ILI cases recorded were based on comparatively low numbers of sentinel physician clinics. Reported rates of ILI cases may, therefore, be less stable than the national rates.



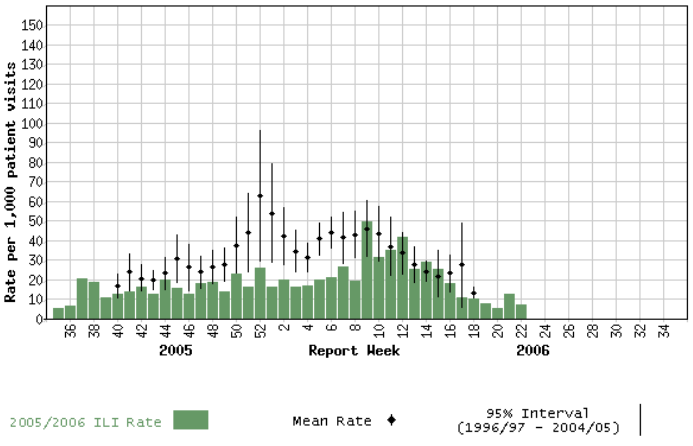
Influenza-like illness (ILI) reporting rates, Canada, by report week, 2004-2005 compared to 1996/97 through 2003/2004 seasons, and 2005-2006 compared to 1996/97 through 2004/2005 seasons

2004-2005 compared to 1996/97 through 2003/2004 seasons



Note: No data available for mean rate in previous years for weeks 21 to 39 (1996-1997 through 2002-2003 seasons). During weeks 20-39, 2002-2003/2003-2004 seasons, ILI is reported once every two weeks, on even weeks only

2005-2006 compared to 1996/97 through 2004/2005 seasons



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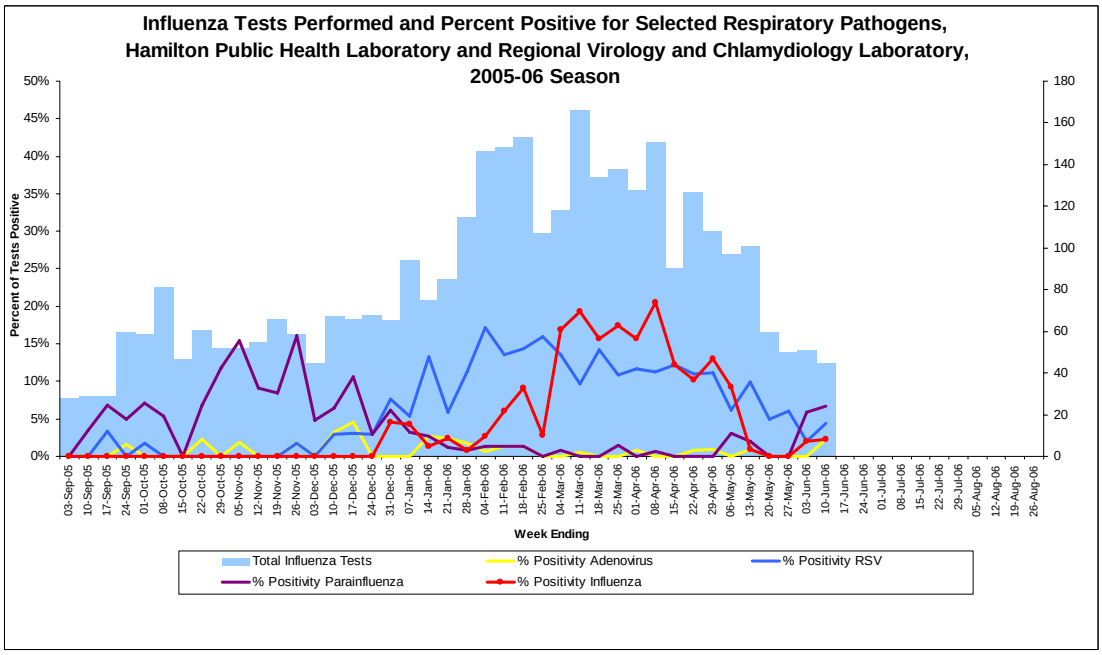
Source: FluWatch (May 21-June 3 2006 and Aug 14-Aug 27, 2005)

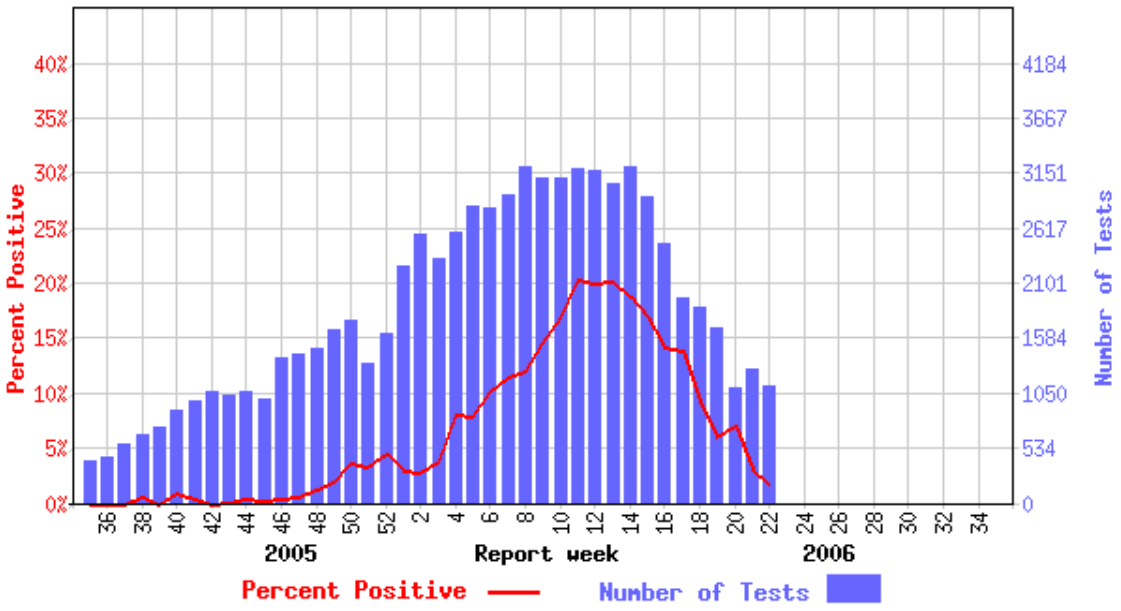
Results of nasal swab testing in ILI patients

The City of Hamilton Surveillance Unit records reported results of testing of nasal swabs at the Regional Virology Laboratory and the Hamilton Public Health Laboratory by virus and the direct enzyme immunoassay (EIA) rapid test. Results provided by these two laboratories are expresses as a percentage of all tests performed that are positive, and allow for confirmation of influenza cases where samples test positive for Influenza virus.

During the 2005 to 2006 influenza season, testing of nasal swabs in the City of Hamilton revealed that, besides influenza A and B, the highest percentage of the samples tested were identified as respiratory syncytial virus (RSV) and parainfluenza. The temporal pattern observed for percent positive influenza tests was similar to that reported for Canada, peaking in the month of April 2006.

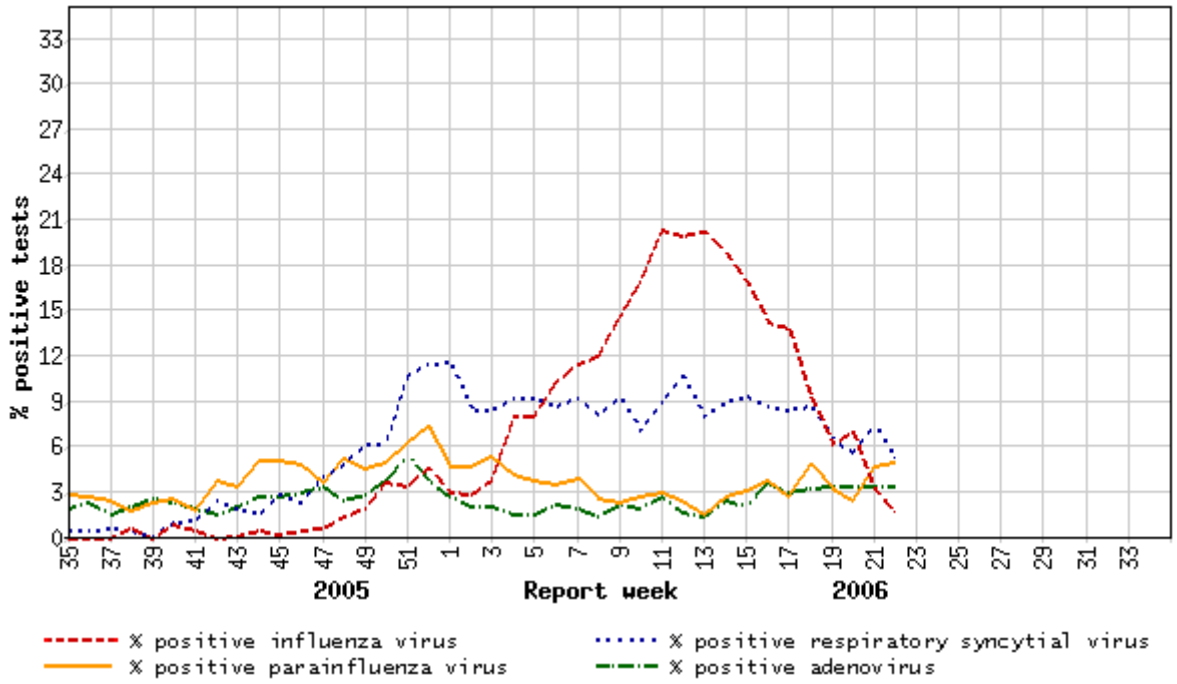


Influenza tests reported and percentage of tests positive, Canada, by report week, 2005-2006



Source : FluWatch weeks 21&22 (May 21-June 3) 2006

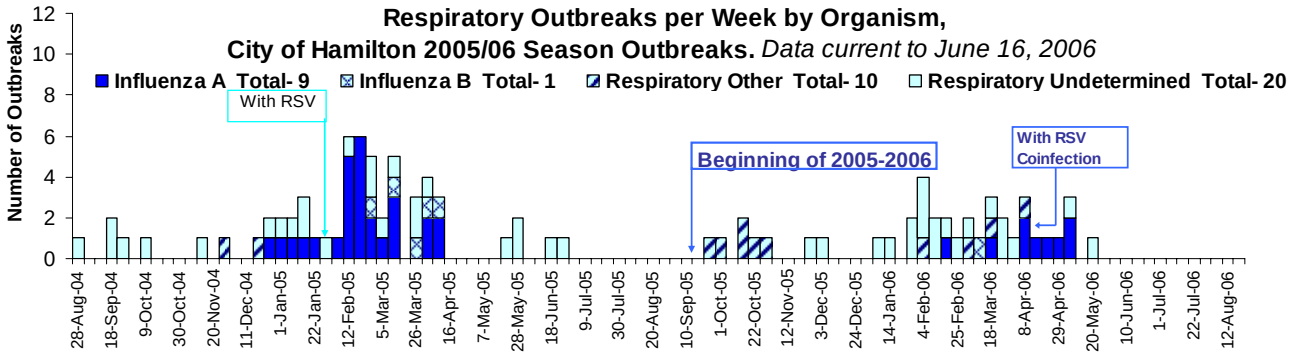
Percent positive influenza tests, compared to other respiratory viruses by reporting week, Canada, 2005-2006



Source : FluWatch weeks 21&22 (May 21-June 3) 2006

Influenza Outbreaks

Overall, 40 respiratory outbreaks were recorded by the Hamilton Public Health Surveillance Unit. Of these, 10 were identified as influenza outbreaks, one of which was Influenza A and 9 of which were Influenza B. Ten outbreaks were determined to have been caused by other infectious agents, and 20 were of undetermined aetiology.

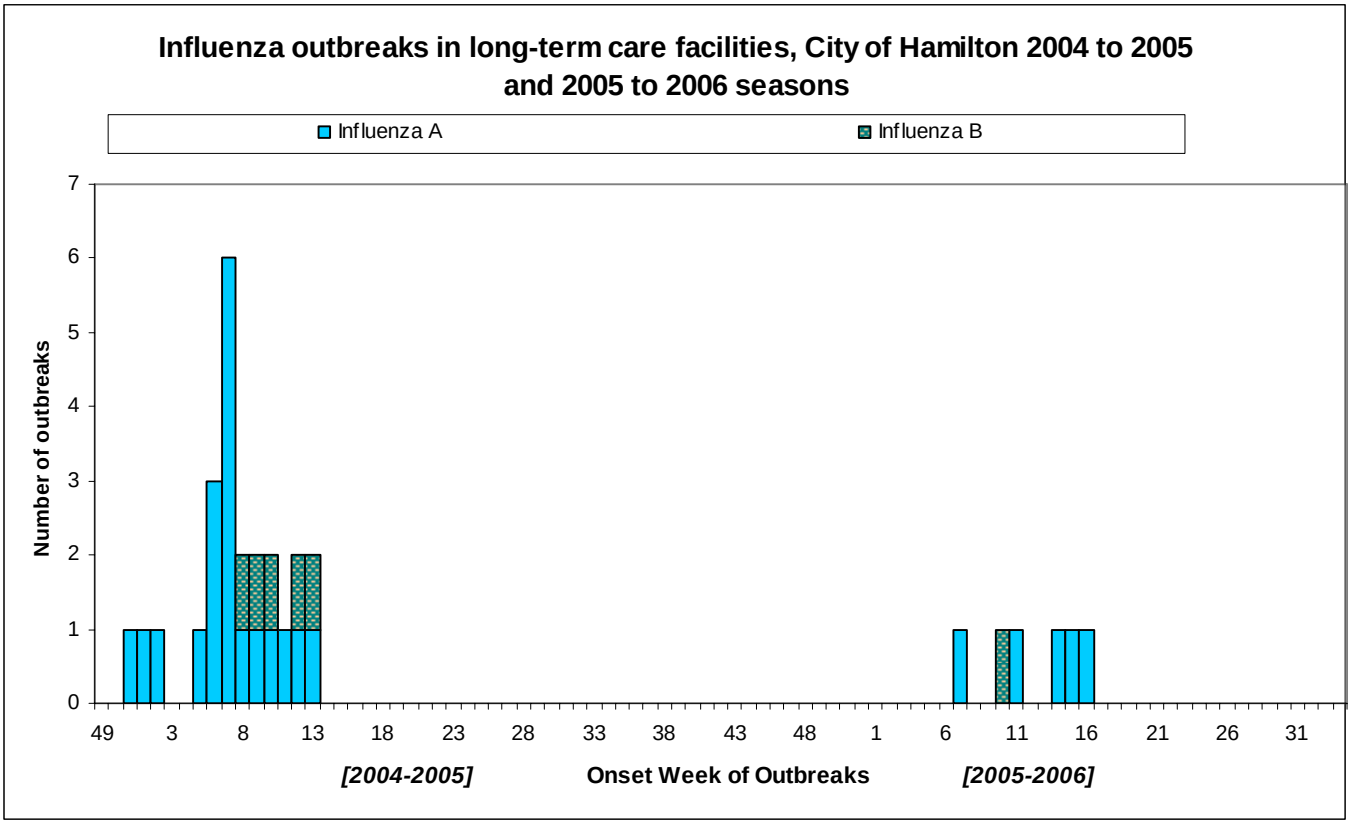


Outbreaks in Residential Institutions

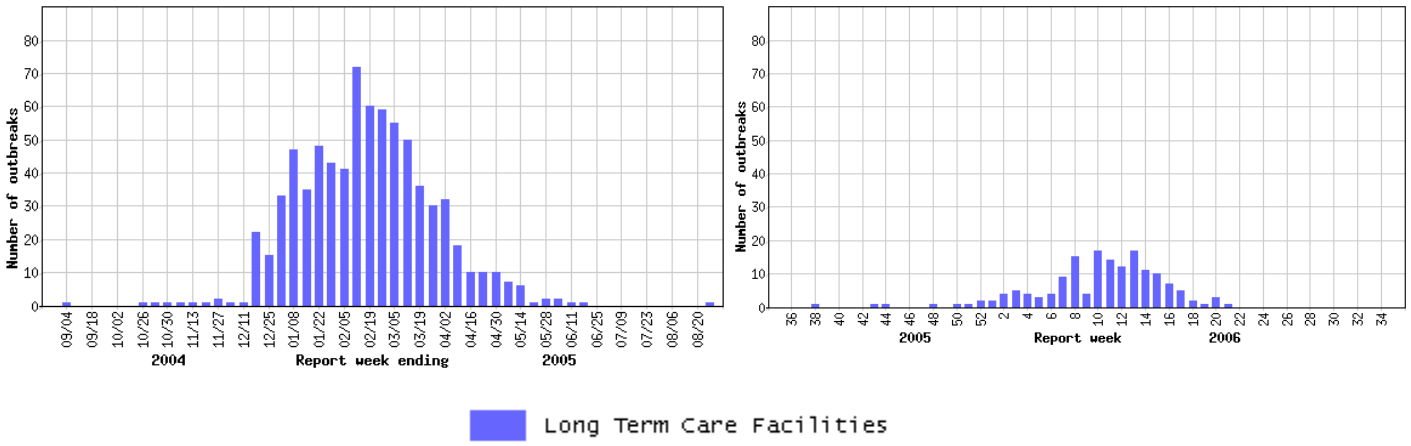
Outbreaks in residential institutions are defined as two or more cases of ILI occurring within 7 days in the same institution, with at least one laboratory confirmed case of influenza *(Source: FluWatch 2006-06-16).*

In the City of Hamilton, only 6 outbreaks of influenza were reported in long-term facilities (LTCFs) during the 2005 - 2006 influenza season. This was a noticeable reduction in the number of LTCF outbreaks compared to the 2004-2005 season, when 22 LTCF outbreaks were recorded. In the current season, the outbreaks occurred during weeks 7 to 16 of 2006, corresponding to the reported peak in LTCF outbreaks throughout Canada.

Similarly, the number of LTCF outbreaks reported throughout Canada in the 2005-2006 season was much lower than the number reported in the previous year.



Number of Outbreaks in Long Term Care Facilities by Report Week, Canada, 2004-2005 and 2005-2006

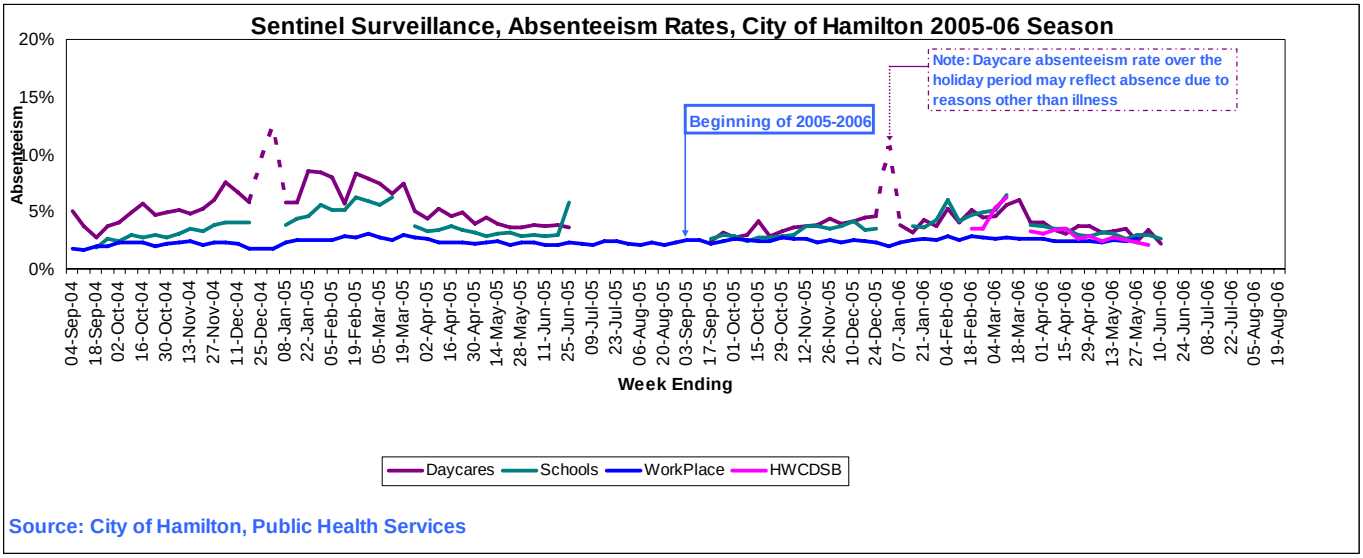


Source : FluWatch weeks 21&22 (May 21-June 3) 2006

Sentinel Surveillance: Absenteeism

During the course of the 2005-2006 influenza season, the City of Hamilton Surveillance Unit was able to monitor weekly absenteeism in 42 daycare centres, elementary schools and workplaces in the City, recorded as the proportion of students or workers absent over the course of each week. In addition, from February 2006, the Hamilton Wentworth Catholic District School Board has provided information on daily absenteeism for all 53 elementary schools governed by the board. This information has been included in the absenteeism chart, displayed as a weekly proportion of students absent.

In general, the temporal trend of absenteeism in daycares was similar to that in elementary schools during the 2005-2006 influenza season.



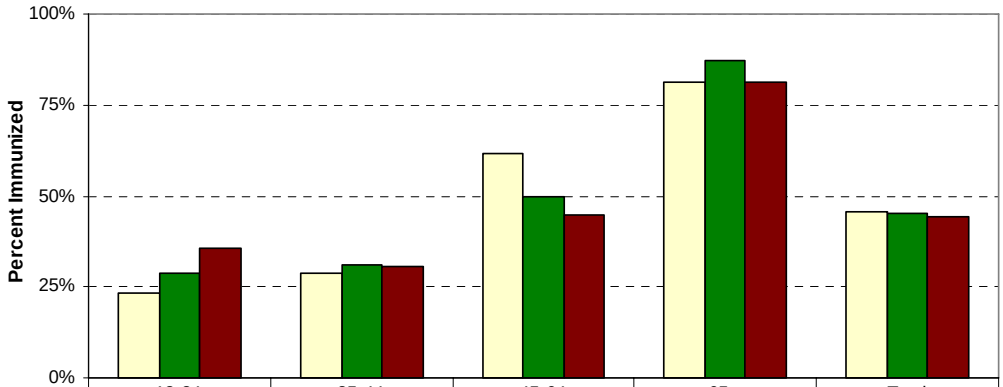
Source: City of Hamilton, Public Health Services

Influenza Vaccine Coverage

Overall, 44% of 394 respondents aged 18 and older surveyed in the City of Hamilton in 2006 indicated that they had been immunized against influenza in the current influenza season. This was similar to the proportion of persons immunized in the 2003-2004 and 2004-2005 influenza seasons. As in the previous two influenza seasons, vaccine coverage was highest in the oldest age group of respondents (persons aged 65 and older) and was relatively low in the youngest age groups (persons aged 18 to 44).

Percentages immunized in the various age groups are summarized in the chart below.

Influenza immunization by age group, City of Hamilton, 2003-2004, 2004-2005, and 2005-2006 influenza seasons



	18-24	25-44	45-64	65+	Total
2003-2004	23.2%	28.7%	61.5%	81.5%	45.8%
2004-2005	28.6%	30.8%	49.7%	87.0%	45.2%
2005-2006	35.6%	30.7%	44.7%	81.4%	44.2%

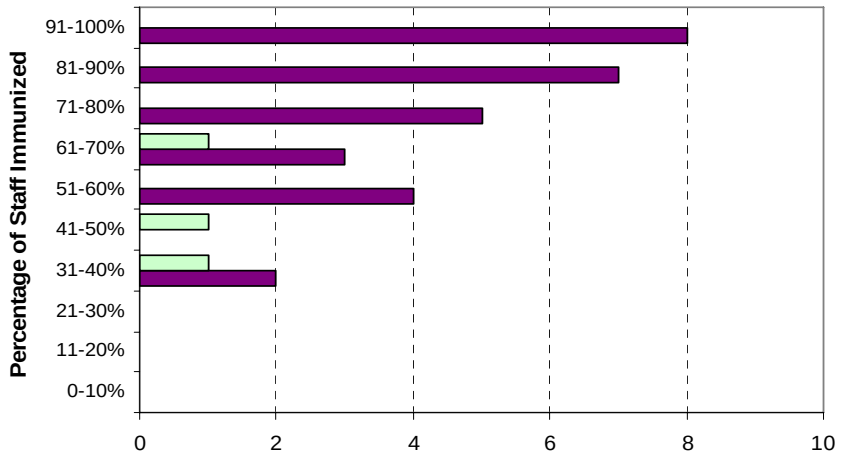
Age group in years

Source: Rapid Risk Factor Surveillance System, City of Hamilton, 2006. Data were collected from January to April of each year and indicated whether respondents had been immunized against influenza since September of the previous year.

Among staff of 29 long-term care institutions in the City of Hamilton, over 90% of staff in 8 (28%) institutions were immunized against influenza during the 2005-2006 influenza season. Relatively low rates (31-40%) of influenza immunization were reported in only 2 (7%) institutions. Staff in hospitals generally showed a lower percentage of vaccine coverage than those of long-term care facilities; between 31% and 61% of staff were immunized against influenza in 3 City of Hamilton hospitals.

Compared to staff of hospitals and LTC facilities, vaccine coverage among LTC residents was relatively high. Between 91% and 100% of residents in 27 of 29 long-term care facilities in the City of Hamilton were immunized against influenza during the 2005-2006 season, while between 81% and 90% of residents in 2 facilities were immunized.

Influenza Vaccination Among Staff of Long-Term Care Institutions and Hospitals in Hamilton, 2005-2006 Influenza Season

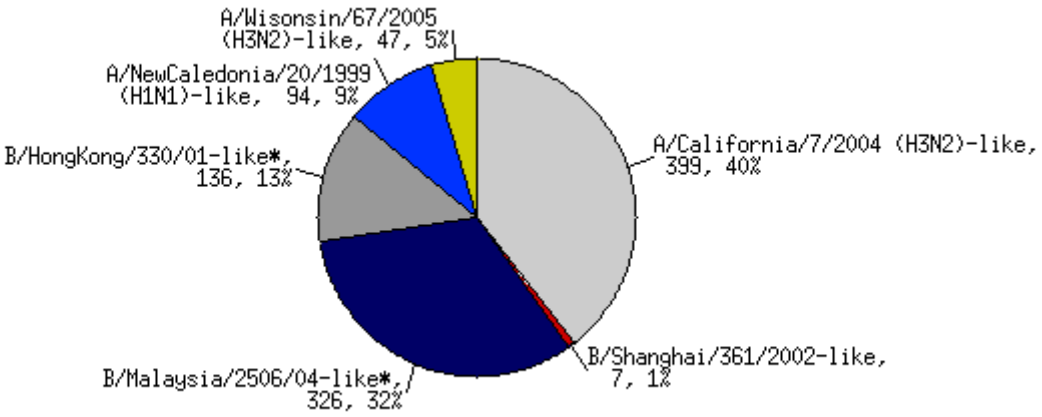


Strains of Influenza

Data from the National Microbiology Laboratory reported that 40% of all isolates subtyped during the 2005-2006 influenza season were identified as Influenza A/California/7/2004 (H3N2)-like strain, and 32% of isolates typed were Influenza B/Malaysia/2506/05-like strain. Nine percent and 1% of isolates characterized were Influenza A/New Caledonia/20/1999 (H1N1)-like and B/Shanghai/361/2002-like, respectively.

In the City of Hamilton, of 5 isolates subtyped, 3 were identified as H1N1, and 2 as H3N2.

Influenza strain characterization, Canada, cumulative, 2005-2006 influenza season by the Respiratory Viruses Section at the National Microbiology Laboratory [N=1009]



NACI recommends that the trivalent vaccine for the 2004-2005 season in Canada contain A/New Caledonia/20/99 (H1N1)-like, A/Fujian/411/2002 (H3N2)-like, and B/Shanghai/361/2002-like virus antigens.

Source : FluWatch weeks 25&26 (June 18-July 1) 2006