Weekly Influenza Surveillance Report

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

NATIONAL VIRUS REFERENCE LABORATORY

Week 7 2005

Week starting Monday 14th February 2005 &
ending Sunday 20th February 2005

Report produced: 24/02/2005

This report is produced in collaboration with the Departments of Public Health

Summary
During week seven 2004, influenza activity remained at low levels in Ireland, with six cases of influenza-like illness (ILI) reported by the sentinel GPs. Of the five sentinel swabs submitted to the NVRL for testing, one was positive for influenza A. To date this season, 49 influenza A (unsubtyped), 58 influenza A (H3N2), 36 influenza A (H1N1) and 7 influenza B viruses have been detected by the NVRL.

Clinical data
During week seven (week ending 20th February 2005), six cases of ILI were reported by sentinel general practices, corresponding to an ILI consultation rate of 6.2 per 100,000 population (figure 1). This is a decrease from the updated rate for week six of 10.7 per 100,000 population.

Five of the ILI cases were in the 15-64 years age group and one was aged over 65 years. Returns were received from 31 out of 36 sentinel GP practices, giving a population coverage of 2.5% (86% of the total possible reporting GP patient population). Four practices reported ILI.

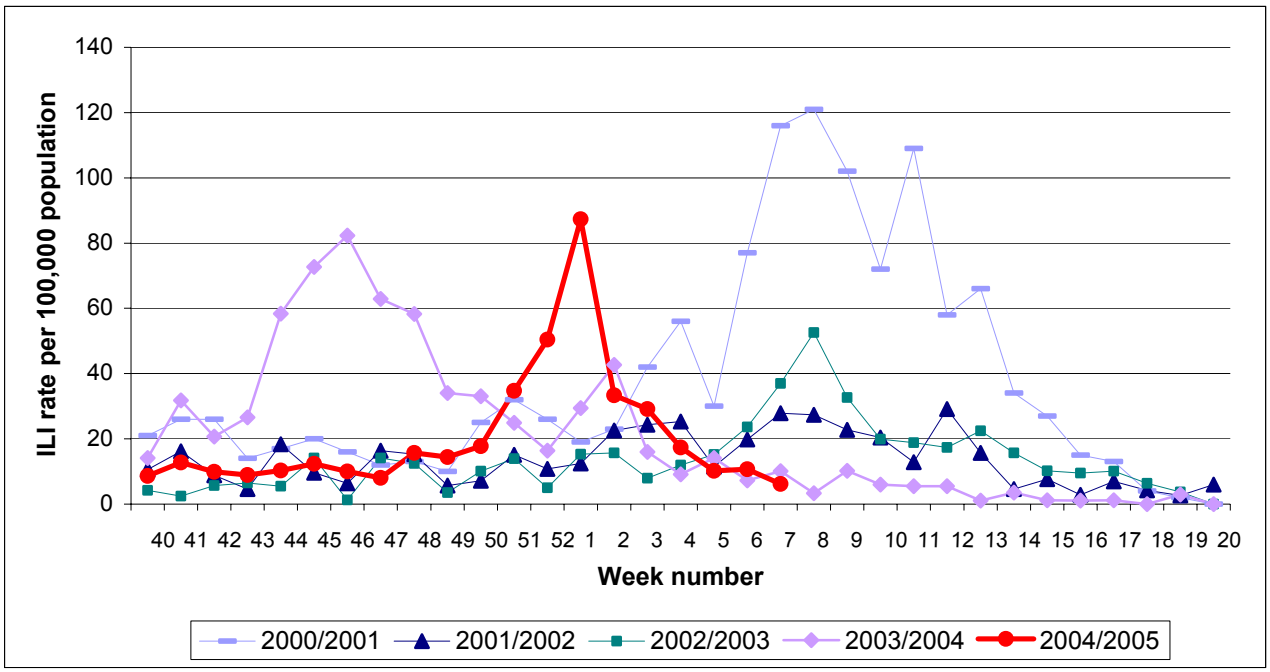

Figure 1. GP consultation rate for ILI per 100,000 population by week, during the 2000/2001, 2001/2002, 2002/2003, 2003/2004 & 2004/2005**-influenza seasons.

***Please note that for comparison with previous years, data for week 52 2004 on this graph represents the average of weeks 52/04 and 53/04*

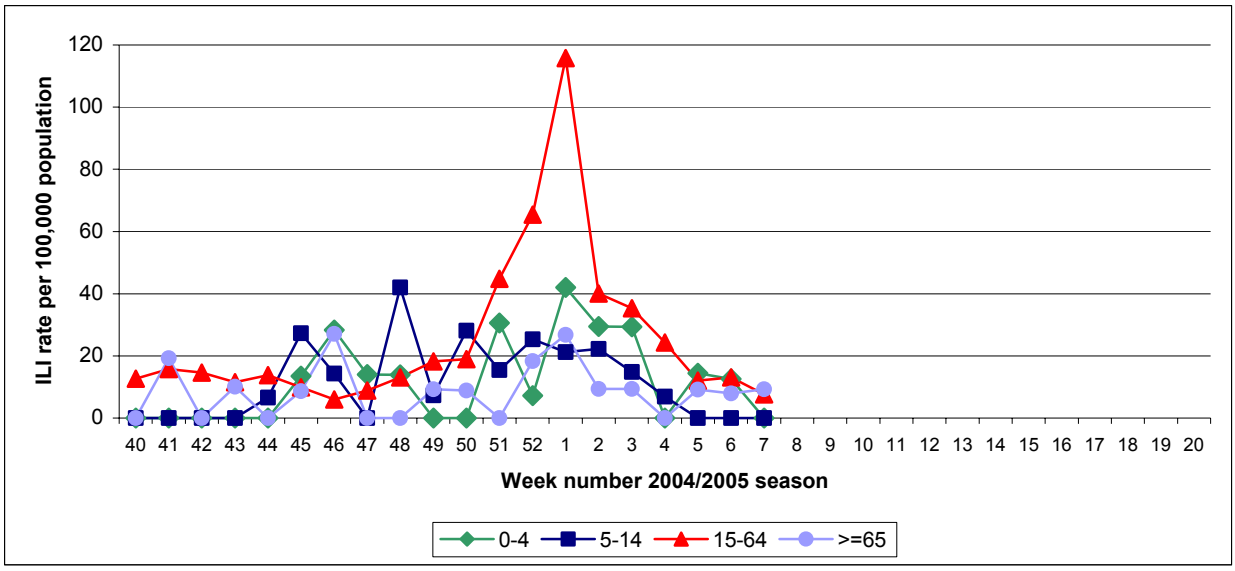

Figure 2. Age specific GP consultation rate* for ILI per 100,000 population by week** for the 2004/2005-influenza season

** Please note the denominator used in the age specific consultation rate is from the 2002 census data; this assumes that the age distribution of the sentinel general practices is similar to the national age distribution.*
***Please note that for comparison with previous years, data for week 52 2004 on this graph represents the average of weeks 52/04 and 53/04*

Virological data from the National Virus Reference Laboratory

The National Virus Reference Laboratory (NVRL) received five swabs taken during week seven by sentinel GPs (tables 1&3). One of these tested positive for influenza A (unsubtyped). The NVRL also tested 55 respiratory non-sentinel specimens, taken in hospitals during week seven. Three tested positive for RSV and none were positive for influenza (tables 2&4, figure 3).

To date this season, 49 influenza A (unsubtyped), 58 influenza A (H3N2), 36 influenza A (H1N1) and 7 influenza B viruses have been detected by the NVRL (table 3). Twenty-five of these were in the 0-4 years age group, 23 were in the 5-14 years age group, 83 were in the 15-64 years age group and 17 were aged over 64 years. Of the 324 RSV detections to date, 186 were aged 6 months or less, 81 were aged between 7 and 11 months, 36 were aged between 1 and 4 years, and 15 were aged 5 years or older. Ages were unavailable for six of the RSV-positive patients and two of the influenza-positive patients.

Table 1: Total number of sentinel specimens tested for influenza and positive results by type and subtype for week 7 2005 and the 2004/2005 season to date

Week number	Total specimens	Influenza positive specimens	% Influenza positive	Influenza A (Unsubtyped)	Influenza A (H3N2)	Influenza A (H1N1)	Influenza B	RSV
7	5	1	20.0	1	0	0	0	0
Total	267	104	39.0	5	57	35	7	5

Table 2: Total number non-sentinel* respiratory specimens and positive results by type and subtype for week 7 2005 and the 2004/2005 season to date

Week number	Total specimens	Influenza positive specimens	% Influenza positive	Influenza A (Unsubtyped)	Influenza A (H3N2)	Influenza A (H1N1)	Influenza B	RSV
7	55	0	0.0	0	0	0	0	3
Total	1065	46	4.3	44	1	1	0	319

Table 3: Total number of sentinel and non-sentinel* respiratory specimens and positive results for week 7 2005 and the 2004/2005 season to date

Week number	Total specimens	Influenza positive specimens	% Influenza positive	Influenza A (Unsubtyped)	Influenza A (H3N2)	Influenza A (H1N1)	Influenza B	RSV
7	60	1	1.7	1	0	0	0	3
Total	1332	150	11.3	49	58	36	7	324

*Please note that non-sentinel specimens include all specimens referred to the NVRL, these specimens are mainly from hospitals and some GPs and may include more than one specimen from each case.

Table 4: Total number of sentinel and non-sentinel* influenza A and B positive specimens by health board for week 7 2005 and the 2004/2005 season to date

	Week 7 2005			Season to date		
	Flu A	Flu B	Total	Flu A	Flu B	Total
ERHA	1	0	1	55	2	**57**
MHB	0	0	0	4	0	**4**
MWHB	0	0	0	14	1	**15**
NEHB	0	0	0	9	0	**9**
NWHB	0	0	0	8	0	**8**
SEHB	0	0	0	26	2	**28**
SHB	0	0	0	10	1	**11**
WHB	0	0	0	17	1	**18**
Total	**1**	**0**	**1**	**143**	**7**	**150**

* Please note that non-sentinel specimens include all specimens referred to the NVRL, these specimens are mainly from hospitals and some GPs and may include more than one specimen from each case.

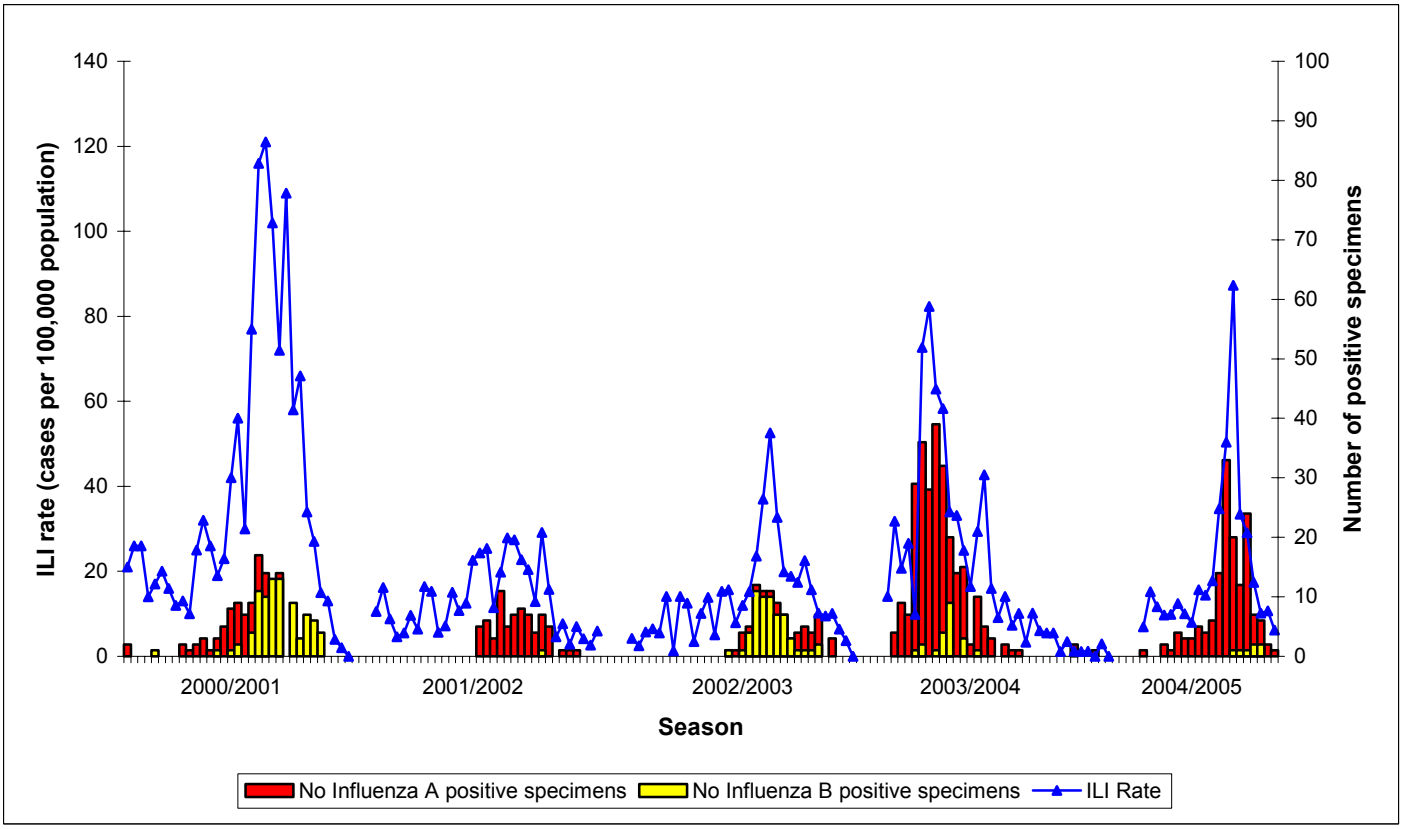

Figure 3. ILI rate and number of positive specimens detected during the 2000/2001, 2001/2002, 2002/2003, 2003/2004 and 2004/2005 seasons.

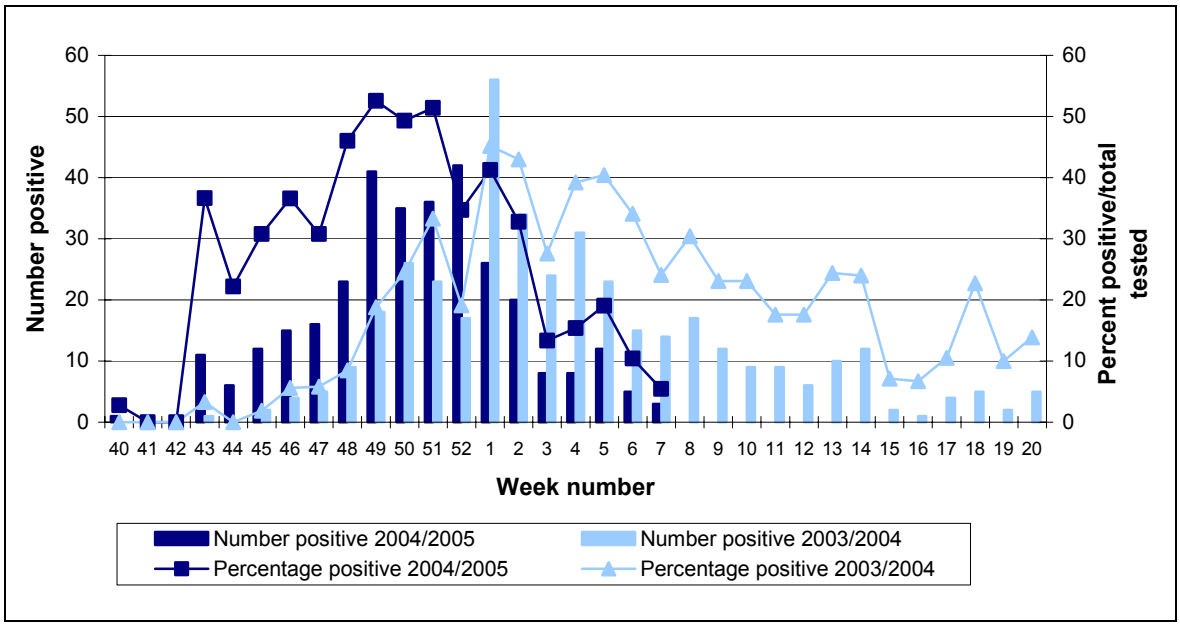

Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2004/2005** and 2003/2004 influenza seasons.

**Please note that for comparison with previous years, data for week 52 2004 on this graph represents the average of weeks 52/04 and week 53/04

Antigenic characterisation
Two specimens have been characterised to date this season. One influenza A (H1N1) isolate has been antigenically characterised as A/New Caledonia/20/99-like. The current season's vaccine contains an A/New Caledonia/20/99(H1N1)-like virus and should provide good protection against the strain. One influenza A (H3N2) isolate was found to be closest in antigenic character to the reference viruses A/Shantou/1219/04 and A/Oslo/807/04. The current vaccine will also provide protection against these strains.

Outbreak reports
Two influenza outbreaks have been reported this season to date. An outbreak of influenza A (H3N2) in a long-stay care facility for the elderly was reported by the ERHA during week three. Thirty-seven patients and 19 staff members were affected, this corresponds to an attack rate of 33.4%. Control measures have been implemented and no new cases have been reported since January 25th. A school outbreak of influenza-like illness occurred during week 48 in the MWHB. A total of 32 pupils were reported ill. There were no hospitalisations. Influenza A (unsubtyped) was isolated from two cases.

Mortality data
There were no influenza deaths reported during week seven.

Influenza activity by health board/authority
Influenza activity is reported on a weekly basis from the Departments of Public Health. Influenza activity is based on sentinel GP ILI consultation rates, laboratory-confirmed cases of influenza, sentinel hospital admissions data and/or sentinel school absenteeism data. During week six, five health boards reported sporadic activity and three reported no activity.

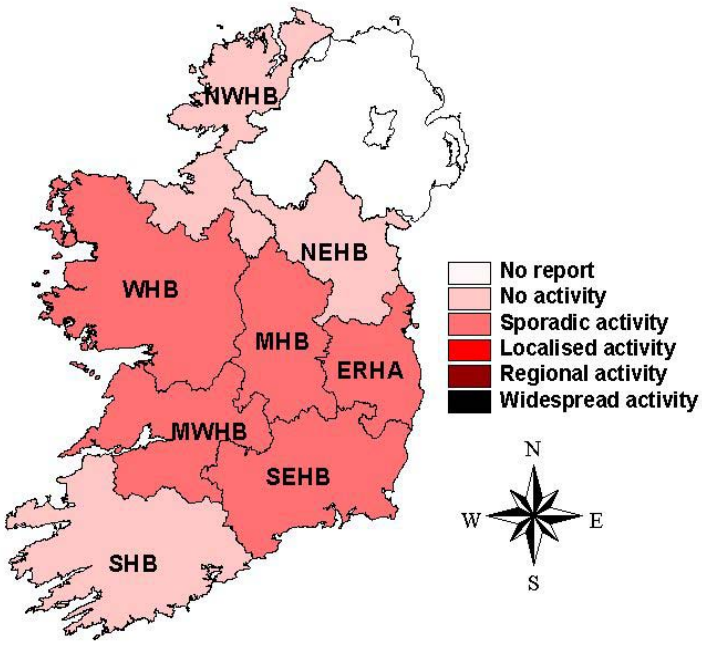

Figure 4: Map of influenza activity by health board/authority during week 6 2004/5

Influenza activity in Northern Ireland
Influenza activity levels increased in Northern Ireland during week seven. Four cases of clinical influenza and 80 cases of ILI were reported. These figures correspond to a combined ILI and clinical influenza rate of 68.2 cases per 100,000 population, which is an increase on the updated rate of 44.7 per 100,000 population, for week six. Returns were received from 21 of the 24 sentinel GP practices, giving a population coverage of 7.2%.
http://www.cdscni.org.uk//

Influenza activity in England, Scotland and Wales
During week seven, clinical influenza activity in England fell just below baseline levels. The GP consultation rate for ILI decreased to 27 consultations per 100,000 (from 34 consultations per 100,000 population in week six). ILI consultation rates also decreased in Scotland (31 per 100,000 population, compared to 39 per 100,000 population in week six), but increased in Wales (10 per 100,000 population, compared to 2 per 100,000 population in week six). Influenza viruses were detected in 18 community samples in the UK; 16 of these were influenza A (H3) and 2 were influenza B. There were no RSV detections in week seven. Almost 60% of viruses characterised by the ERNVL to date this season have been influenza A/Wellington/1/2004(H3N2)-like.
http://www.show.scot.nhs.uk/scieh/infectious/respiratory/influenzasurveillance/influenzasurveillance.htm
http://www.hpa.org.uk/infections/topics_az/influenza/flu.htm

Influenza activity in Europe
During week seven, influenza activity remained at high or medium levels in several European countries. Widespread outbreaks were reported by eleven countries; Austria, Belgium, Czech Republic, France, Germany, Italy, Luxembourg, Netherlands, Norway, Slovenia and Switzerland.

Five hundred and twenty-eight (31.4%) sentinel swabs and 453 (24.3%) non-sentinel swabs tested positive for influenza. Of these, 592 (60.4%) were influenza A (unsubtyped), 24 (2.5%) were influenza A (H1), 7 (0.7%) were influenza A (H1N1), 139 (14.2%) were influenza A (H3), 104 (10.6%) were influenza A (H3N2) and 115 (11.7%) were influenza B.

Six hundred and six influenza viruses have been antigenically characterised in Europe between week 40 2004 and week 6 2005. Of these, 357 (58.9%) were A/Wellington/1/2004 (H3N2)-like, 129 (21.3%) were A/New Caledonia/20/99 (H1N1)-like, 35 (5.8%) were A/Fujian/411/2002 (H3N2)-like, 2 (0.3%) were A/Panama/2007/99 (H3N2)-like, 53 (8.7%) were B/Jiangsu/10/2003-like and 30 (5%) were B/Hong Kong/330/2001-like. Many recent isolates have also been shown to be closely related to the A/California/7/04 (H3N2) strain, which will be the prototype A(H3N2) component of the 2005/2006 northern hemisphere vaccine.

To date this season, influenza A (H3N2), influenza A (H1N1) and influenza B have been detected in Europe. The dominant virus type has been influenza A, accounting for 91.3% of detections. Where influenza A viruses have been subtyped, 83.4% have been influenza A (H3N2) and 16.4% have been influenza A (H1N1). http://www.eiss.org/

Influenza activity in Canada
During week six (week ending 12/02/2005), influenza activity remained high in Canada, with widespread activity reported in British Columbia, Alberta, Saskatchewan and Ontario.

Elsewhere in Canada either localised, sporadic or no activity was reported. Sentinel physicians reported 49 cases of ILI per 1,000 patient visits, during week six. This is an increase on the week five rate of 36 cases of ILI per 1,000 patient visits. Influenza A was detected in 850 of the 4838 specimens sent for laboratory confirmation and influenza B was detected in 61. To date this season, there have been a total of 571 influenza outbreaks, of which 423 occurred in retirement homes, 38 in hospitals and 110 in schools. Since the start of the 2004/2005 influenza season, 460 influenza viruses have been antigenically characterised. Four hundred and twenty (91.3%) were influenza A/Fujian/411/02(H3N2)-like, thirty-nine (8.5%) were influenza B/Shanghai/361/02-like and one (0.2%) was influenza B/Hong Kong/330/01-like. Further analysis of 15 Canadian isolates, by the CDC in Atlanta, revealed that five of these were A/California/7/04(H3N2)-like viruses. http://www.phac-aspc.gc.ca/fluwatch/index.html

Influenza activity in the United States
Influenza activity in the US continued to increase during week six (week ending 12/02/2005). Over five percent (5.4%) of patient visits to US sentinel providers were due to ILI. This percentage has been above the national baseline of 2.5% for the past five weeks. During week six, 29 states reported widespread influenza activity, 19 states and New York City reported regional activity and the remaining states reported local activity.

WHO and NREVSS laboratories tested 3,610 specimens for influenza during week six. One hundred and eighty of these were positive for influenza A (H3N2), 603 were positive for influenza A (unsubtyped) and influenza B was detected in 129 specimens. Since October 1st, 256 influenza viruses have been antigenically characterised by the CDC. One hundred and twenty-five influenza A (H3N2) viruses were characterised as antigenically similar to the A/Wyoming/3/2003 and 103 were more closely related to a newer reference strain, A/California/7/2004 (H3N2). Sixty-one influenza B viruses were characterised as B/Shanghai/361/02-like and five showed a reduced reaction to B/Shanghai/361/02 ferret antisera. The remaining 17 influenza B viruses were characterised as belonging to the B/Victoria lineage. Two influenza A (H1N1) viruses were characterised as antigenically similar to the haemagglutinin of the vaccine strain A/New Caledonia/20/99.
http://www.cdc.gov/flu/weekly/

Influenza activity Worldwide
During week seven, widespread influenza outbreaks were reported in the Ukraine (one influenza A (H1) and seven influenza B viruses were detected). Regional outbreaks were reported in Finland (four influenza A (unsubtyped) and two influenza A (H3) viruses were detected) and sporadic influenza activity was seen in China, Chile and Israel.
http://rhone.b3e.jussieu.fr/flunet/www/

Avian influenza
The WHO Influenza Surveillance Network has characterised H5N1 viruses isolated during the 2004/2005 outbreak in Asia and has made recommendations on the antigenic and genetic characteristics of the H5N1 viruses, which are suitable for vaccine production. WHO collaborating centres and reference laboratories have also developed several recombinant H5N1 prototype vaccine strains. These have been made available to a number of institutions and companies and several vaccines have been produced for clinical testing.

No new cases of avian influenza in humans have been reported since the 2nd of February 2005. The total number of laboratory-confirmed human cases of avian influenza A (H5N1) in

Thailand, Viet Nam and Cambodia since the January 2004 is now 55. Forty-two (76.4%) of these were fatal. Although the avian influenza virus is highly pathogenic in humans, there is no evidence of efficient and sustained human-to-human transmission. For further information on the avian influenza outbreaks please consult the following websites:
HPSC: http://www.hpsc.ie/DiseaseTopicsA-Z/AvianInfluenza/
WHO: http://www.who.int/csr/disease/avian_influenza/en/

Northern Hemisphere influenza vaccine for 2004/2005
The vaccine currently in use is in accordance with the WHO recommendations on the composition of influenza vaccines for use in the 2004-2005 Northern Hemisphere influenza season, which are:

- an A/New Caledonia/20/99(H1N1)-like virus
- an A/Fujian/411/2002(H3N2)-like virus[a]
- a B/Shanghai/361/2002-like virus[b]

[a] *The currently used vaccine virus is A/Wyoming/3/2003. A /Kumamoto/102/2002 is also available as a vaccine virus.*
[b] *Candidate vaccine viruses include B/Shanghai/361/2002 and B/Jilin/20/2003, which is a B/Shanghai/361/2002-like virus.*

Northern Hemisphere influenza vaccine for 2005/2006
The WHO announced its recommendations for the composition of the influenza vaccine for the northern hemisphere for 2005/2006 on February 10th 2005. The members of the WHO Collaborating Centres on Influenza recommended that influenza vaccines contain the following strains:

- an A/New Caledonia/20/99(H1N1)-like virus
- an A/California/7/2004(H3N2)-like virus[a]
- a B/Shanghai/361/2002-like virus[b]

a Candidate vaccine viruses are being developed (for further information please see WHO update at http://www.who.int/influenza)
b The currently used vaccine viruses are B/Shanghai/361/2002, B/Jiangsu/10/2003 and B/Jilin/20/2003.

http://www.who.int/csr/disease/influenza/vaccinerecommendations1/en/
www.emea.eu.int

Weekly influenza reports and further information on influenza are available on the HPSC website:
http://www.hpsc.ie/Publications/InfluenzaWeeklySurveillanceReport/
http://www.hpsc.ie/DiseaseTopicsA-Z/InfluenzaFlu/