Weekly Influenza Surveillance Report

Week 11 2005

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

Report produced: 24/03/2005

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

Summary
Clinical influenza activity decreased in Ireland during week eleven, with fifteen cases of influenza-like illness (ILI) reported by the sentinel general practices. Virological indicators were similar to week ten, with one influenza A and four influenza B detections.

Clinical data
During week eleven (week ending 20th March 2005), fifteen cases of ILI were reported by sentinel general practices, corresponding to an ILI consultation rate of 16.2 per 100,000 population (figure 1). This is a decrease from the updated rate for week ten of 21.5 per 100,000 population.

Two of the ILI cases were in the 5-14 age group, ten were aged between 15 and 64 years and three were aged 65 years or older. Returns were received from 29 out of 36 sentinel general practices, giving a population coverage of 2.4% (82.3% of the total possible reporting GP patient population). Eight practices reported ILI. Seven of the fifteen cases were reported by sentinel general practices in the WHB.

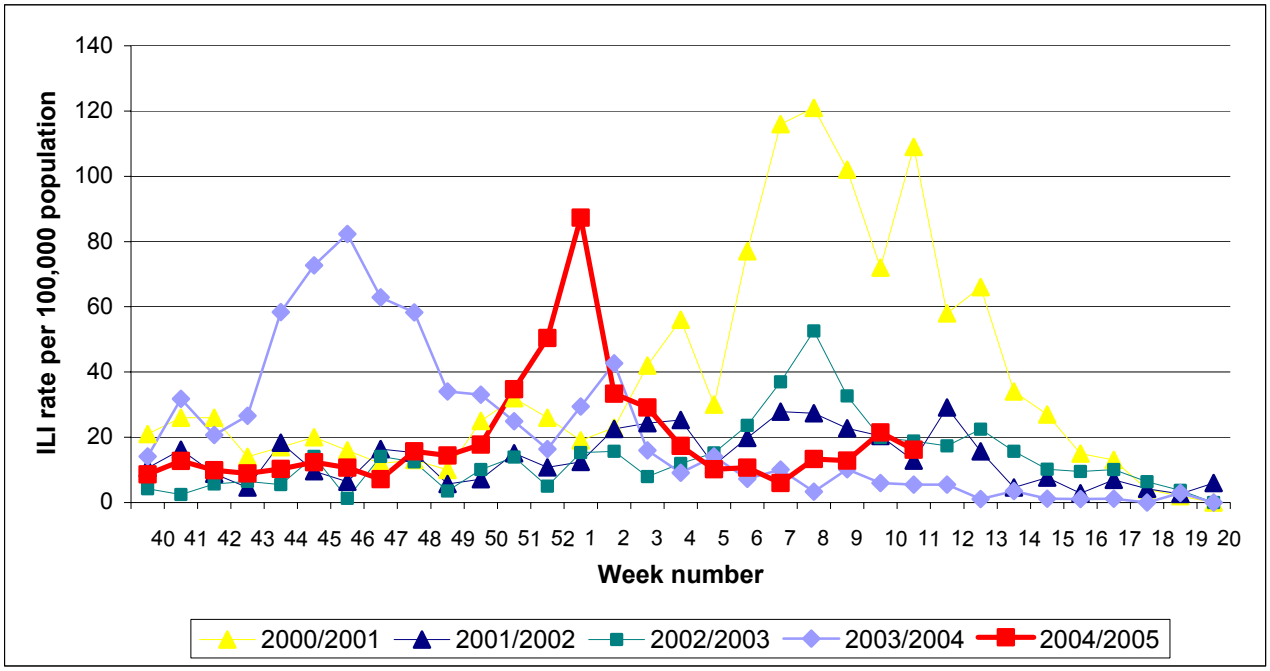

Figure 1. GP consultation rate for ILI per 100,000 population by week, during the 2000/2001, 2001/2002, 2002/2003, 2003/2004 & 2004/2005**-influenza seasons.

***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*

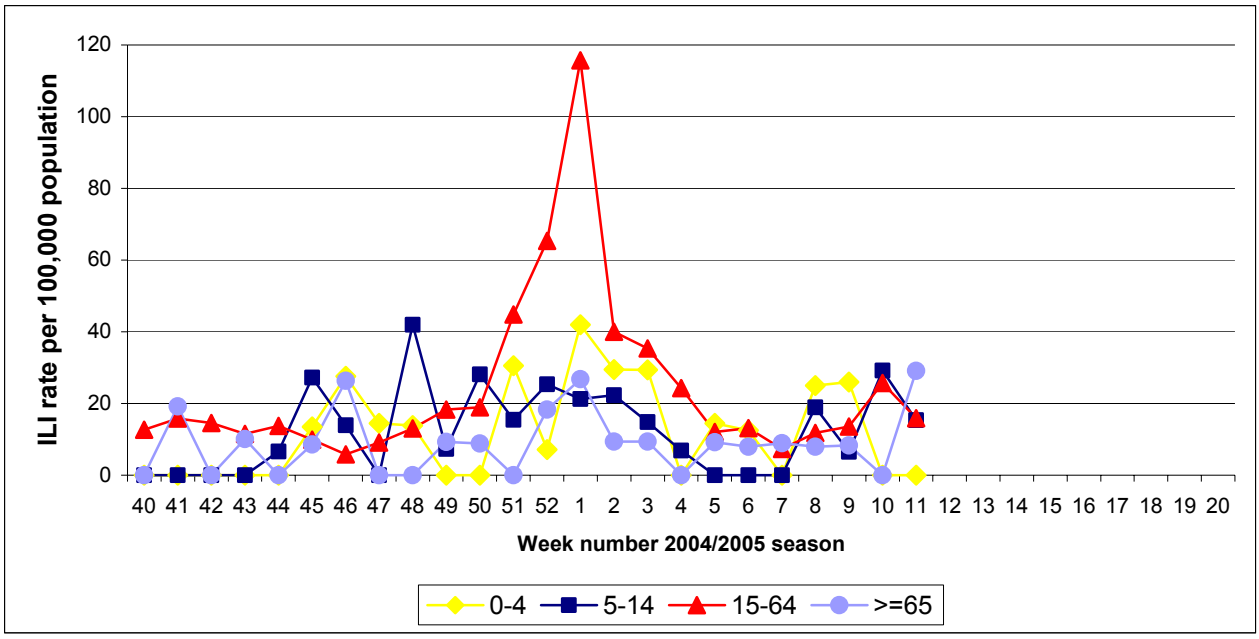

Figure 2. Age specific GP consultation rate* for ILI per 100,000 population by week** for the 2004/2005-influenza season

** 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 eight swabs taken during week eleven by sentinel GPs (tables 1&3). One of these tested positive for influenza A (unsubtyped) and four tested positive for influenza B. The NVRL also tested 32 respiratory non-sentinel specimens, taken in hospitals during week eleven, one of which was positive for RSV. (tables 2&4, figure 3).

To date this season, 60 influenza A (unsubtyped), 58 influenza A (H3N2), 36 influenza A (H1N1) and 20 influenza B viruses have been detected by the NVRL (table 3). Twenty-seven of these were in the 0-4 age group, 24 were in the 5-14 age group, 104 were in the 15-64 age group and 17 were aged over 64 years. Of the 345 RSV detections to date, 198 were aged 6 months or less, 85 were aged between 7 and 11 months, 39 were aged between 1 and 4 years, and 17 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 11 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
11	8	5	62.5	1	0	0	4	0
Total	314	122	38.9	11	57	35	19	6

Table 2: Total number non-sentinel* respiratory specimens and positive results by type and subtype for week 11 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
11	32	0	0.0	0	0	0	0	1
Total	1213	52	4.3	49	1	1	1	339

*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 3: Total number of sentinel and non-sentinel* respiratory specimens and positive results for week 11 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
11	40	5	12.5	1	0	0	4	1
Total	1527	174	11.4	60	58	36	20	345

*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 11 2005 and the 2004/2005 season to date

	Week 11 2005			Season to date		
	Flu A	**Flu B**	**Total**	**Flu A**	**Flu B**	**Total**
ERHA	1	2	3	61	7	**68**
MHB	0	0	0	6	1	**7**
MWHB	0	0	0	14	1	**15**
NEHB	0	0	0	9	3	**12**
NWHB	0	0	0	10	0	**10**
SEHB	0	1	1	26	3	**29**
SHB	0	0	0	11	2	**13**
WHB	0	1	1	17	3	**20**
Total	**1**	**4**	**5**	**154**	**20**	**174**

* 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.

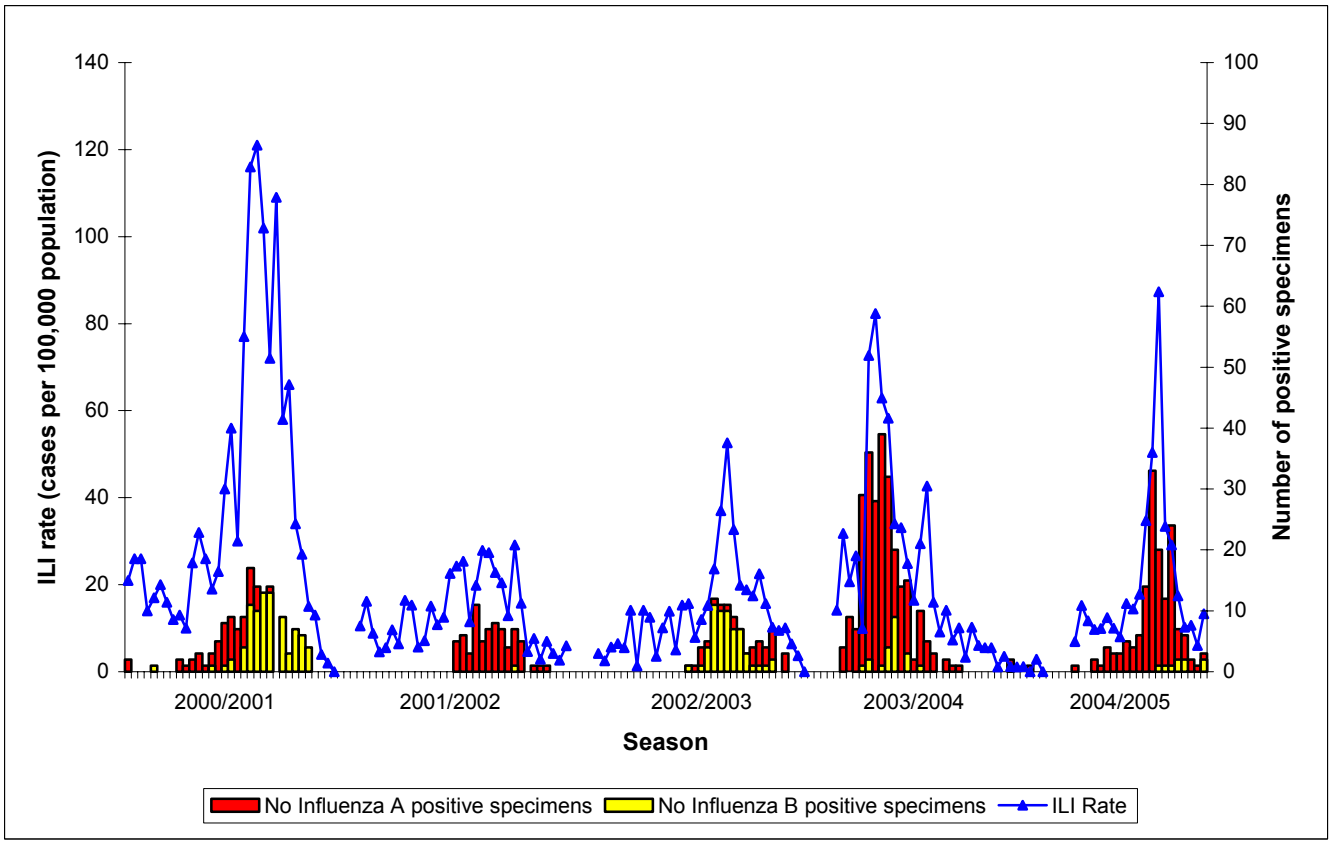

Figure 3. ILI rate and number of positive specimens detected during the 2000/2001, 2001/2002, 2002/2003, 2003/2004 and 2004/2005 seasons.

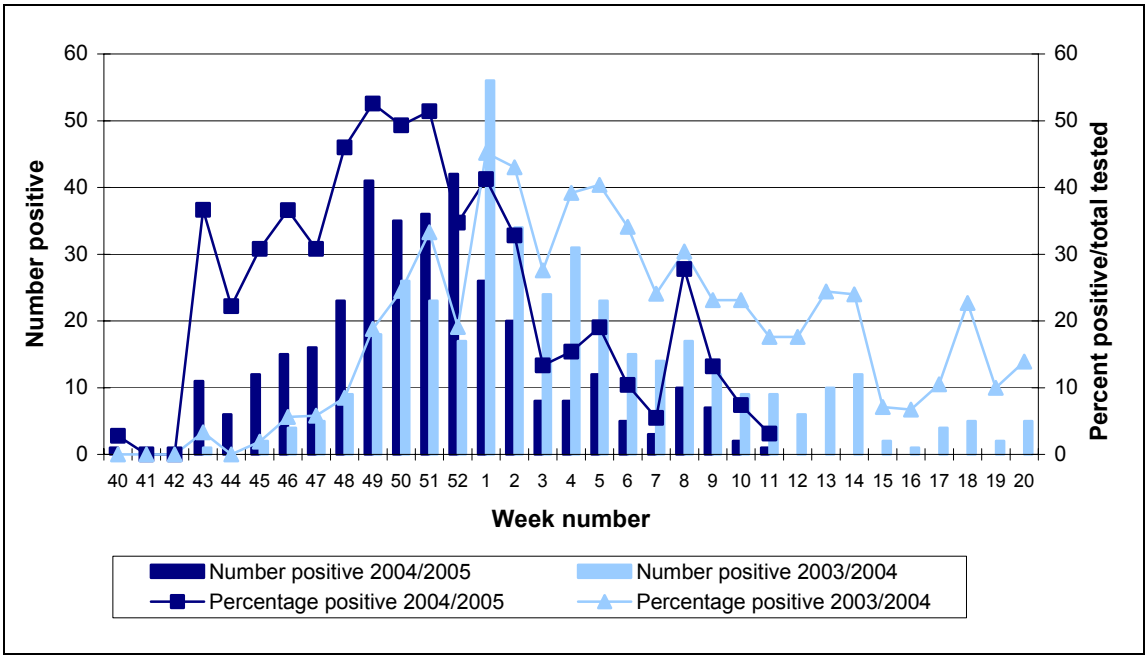

Figure 4. Number and percentage of non-sentinel RSV positive specimens detected during the 2004/2005** and 2003/2004 influenza seasons.

**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. A/Shantou/1219/04-like strains have been found to be closely related to the newer reference strain A/California/7/04 (H3N2). The A/California/7/04(H3N2)-like isolates have reduced titres to the A/Fujian/411/02-like antisera, but the H3N2 component of the current vaccine is expected to provide some protection against this new variant.

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, corresponding to an attack rate of 33.4%. 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
No influenza deaths were reported to the HPSC during week eleven.

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 ten, seven health boards reported sporadic activity and one reported no activity.

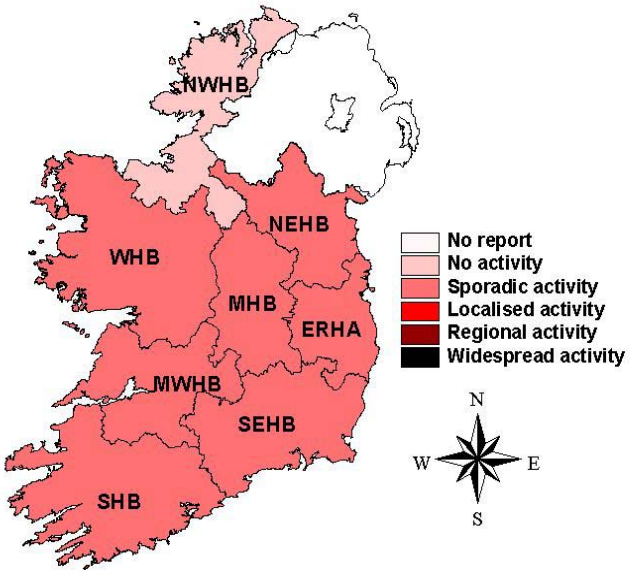

Figure 4: Map of influenza activity by health board/authority during week 10 2005

Influenza activity in Northern Ireland
During week eleven, four cases of clinical influenza and 77 cases of ILI were reported in Northern Ireland. These figures correspond to a combined ILI and clinical influenza rate of 59.8 cases per 100,000 population, which is similar to the updated rate of 62.1 per 100,000 population for week ten. Returns were received from 22 of the 24 sentinel GP practices, giving a population coverage of 8%. Influenza A(H3) was detected in three non-sentinel swabs.
http://www.cdscni.org.uk//

Influenza activity in England, Scotland and Wales
Clinical influenza activity in England increased in week eleven (27 consultations per 100,000) but remained within baseline levels. Influenza activity in Wales (3 consultations per 100,000) and Scotland (43 consultations per 100,000) remained at similar levels to previous weeks and was also within baseline levels. Respiratory viruses were detected in five community samples tested by the ERNVL; two influenza A (H3) and three influenza B. Influenza B was also detected in four hospital samples during week eleven. To date this season, 63% of viruses characterised by the ERNVL 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 eleven, clinical influenza activity was high in Denmark, Lithuania and Poland, medium in 15 countries and low in seven countries. Widespread outbreaks were reported by nine countries. Influenza activity increased in Latvia, Lithuania, Denmark, Sweden, Romania and Slovakia. In the rest of Europe activity either decreased or was stable and influenza appears to have reached its peak in most of Central Europe.

In most countries influenza A, and particularly influenza A (H3) or (H3N2) dominated, but influenza B detections have been increasing in recent weeks and influenza B was the dominant type detected in Austria, Ireland, Italy, Portugal and Spain and co-dominated in the Czech Republic and Latvia.

Five hundred and forty-eight sentinel swabs and 476 non-sentinel swabs tested positive for influenza. Of these, 510 (49.8%) were influenza A (unsubtyped), 50 (4.9%) were influenza A (H1), 7 (0.7%) were influenza A (H1N1), 215 (21%) were influenza A (H3), 88 (8.6%) were influenza A (H3N2) and 154 (15%) were influenza B.

Two thousand two hundred and fifty-six influenza viruses have been antigenically or genetically characterised in Europe between week 40 2004 and week 10 2005. Of these, 883 (39.1%) were A/Wellington/1/2004 (H3N2)-like, 560 (24.8%) were A/California/7/04 (H3N2)-like, 105 (4.7%) were A/Fujian/411/2002 (H3N2)-like, 434 (19.2%) were A/New Caledonia/20/99 (H1N1)-like, 165 (7.3%) were B/Jiangsu/10/2003-like and 109 (4.8%) were B/Hong Kong/330/2001-like. Since the California reference strain has become available for comparison, many new and re-characterised isolates have been shown to be closely related to it. This strain will be the prototype A(H3N2) component of the 2005/2006 northern hemisphere vaccine.

To date this season, influenza A (H3N2), influenza A (H1N1), influenza A (H1N2) and influenza B have been detected in Europe. The dominant virus type has been influenza A, accounting for 87.5% of detections. Where influenza A viruses have been subtyped, 83.3% were influenza A (H3N2) and 16.3% were influenza A (H1N1). http://www.eiss.org/

Influenza activity in Canada

During week ten (week ending 12/03/2005), influenza activity decreased across most of Canada. Widespread activity was still reported in Ontario and parts of Alberta. Elsewhere, localised, sporadic or no activity was reported. Sentinel physicians reported 47 cases of ILI per 1,000 patient visits. The Public Health Agency of Canada received 3865 reports of laboratory tests for influenza during week nine, including 385 (10.0%) influenza A detections and 151 (3.9%) influenza B detections. To date this season, there have been a total of 947 influenza outbreaks, of which 694 occurred in retirement homes, 72 in hospitals and 181 in schools. Since the start of the 2004/2005 influenza season, 775 influenza viruses have been antigenically characterised. Of the 688 influenza A (H3N2) viruses characterised, 503 (73%) were influenza A/Fujian/411/02(H3N2)-like and 185 (27%) were A/California/7/04(H3N2)-like. Of the 87 influenza B viruses characterised, 73 (83.9%) were influenza B/Shanghai/361/02-like and fourteen (16.1%) were influenza B/Hong Kong/330/01-like. http://www.phac-aspc.gc.ca/fluwatch/index.html

Influenza activity in the United States

Influenza activity in the US decreased during week ten (week ending 12/03/2005). Over three percent (3.3%) 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 nine weeks. The proportion of deaths attributed to pneumonia and influenza was 8.9%, this is above the epidemic threshold level of 8.2% for week ten. During week ten, 12 states reported widespread influenza activity, 24 states reported regional activity and the remaining states reported local or sporadic activity.

WHO and NREVSS laboratories tested 3,857 specimens for influenza during week ten. Eighty-eight of these were positive for influenza A (H3N2), 440 were positive for influenza A (unsubtyped) and influenza B was detected in 229 specimens. Since October 1st, 527 influenza viruses have been antigenically characterised by the CDC. One hundred and forty-five (42.2%) influenza A (H3N2) viruses were characterised as antigenically similar to the A/Wyoming/3/2003 and 199 (57.8%) were more closely related to A/California/7/2004 (H3N2). One hundred and twenty-eight (71.5%) influenza B viruses were characterised as B/Shanghai/361/02-like and seven (3.9%) showed a reduced reaction to B/Shanghai/361/02 ferret antisera. The remaining 44 (24.6%) influenza B viruses were characterised as belonging to the B/Victoria lineage. All four 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 eleven, widespread influenza outbreaks were reported by the Ukraine (3 influenza A(H1) and 10 influenza B viruses detected) and Belarus (8 influenza A(H3) and 5 influenza B viruses detected). Regional outbreaks were reported by Bulgaria.
http://rhone.b3e.jussieu.fr/flunet/www/

Avian influenza
The WHO has not confirmed any further cases of influenza A (H5N1) infections in humans during week 11. The official number of laboratory-confirmed human cases of avian influenza A (H5N1) in Thailand (n=17), Viet Nam (n=51) and Cambodia (n=1) since the January 2004 is now 69. Forty-six (66.7%) of these cases were fatal.

One additional case in a five year-old boy, from the Quang Binh province in central Viet Nam, has been reported in the media. However, the WHO has not yet received confirmation of this case from the Vietnamese MoH. This patient was hospitalised on the 15th March with fever, cough and lung infection and it is reported that he tested positive for the H5N1 virus. His 13 year-old sister died on 9th March after experiencing similar symptoms. A Vietnamese newspaper (Than Nien News) also reported that 195 people, from the same area, have suspicious symptoms and are being tested for the virus. Although the avian influenza virus is highly pathogenic in humans, there is currently no evidence of efficient and sustained human-to-human transmission.

Three universities in the United States have begun recruiting volunteers for a clinical trial of a H5N1 influenza vaccine. The trial will test the vaccine's safety and immunogenicity in 450 adults aged between 18 and 64 years. 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/
CIDRAP (Centre for Infectious Disease Research and Policy, University of Minnesota)

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/