SURVEILLANCE REPORT

Weekly influenza surveillance overview

7 January 2011

Main surveillance developments in week 52/2010 (27 Dec 2010 – 02 Jan 2011)

This first page contains the main developments of this week and can be printed separately or together with the more detailed information following.

- Generally, reporting of influenza has been less complete over weeks 51 and 52 due to the holiday period, which reduces consulting rates and reporting to national centres and subsequently onto ECDC. Nevertheless, in week 52/2010, 15 of the 25 countries reported increasing trends of influenza activity.
- After little change in week 51/2010, the percentage of sentinel specimens that tested positive for influenza rose to 46% in week 52/2010, indicating rising intensity. For combined sentinel and non-sentinel influenza positive specimens, 73% were type A and 27% were type B. Ninety-eight percent of sub-typed influenza A viruses were A(H1N1) 2009.
- In week 52/2010 six countries reported 56 SARI cases, of which 22 were known to have been infected by the A(H1N1) 2009 virus. Of the 613 SARI cases reported since week 40/2010, twelve deaths have been reported.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): High or medium influenza activity was reported by 11 countries and widespread activity was reported by eight countries. Increasing trends of influenza activity were reported by 15 countries. For more information, **click here.**

Virological surveillance: In week 52/2010, an increased percentage (46%) of sentinel specimens tested positive for influenza compared with week 51/2010. Of the 7854 combined sentinel and non-sentinel influenza positive specimens gathered in week 52/2010, 73% were type A and 27% were type B. For more information, **click here.**

Hospital surveillance of severe acute respiratory infection (SARI): In week 52/2010, six countries reported 56 SARI cases, of which 22 tested positive for the A(H1N1) 2009 infection. Three additional countries provided comments relating to the hospital care and the impact of the influenza cases on services. For more information, **click here.**

Sentinel surveillance (ILI/ARI)

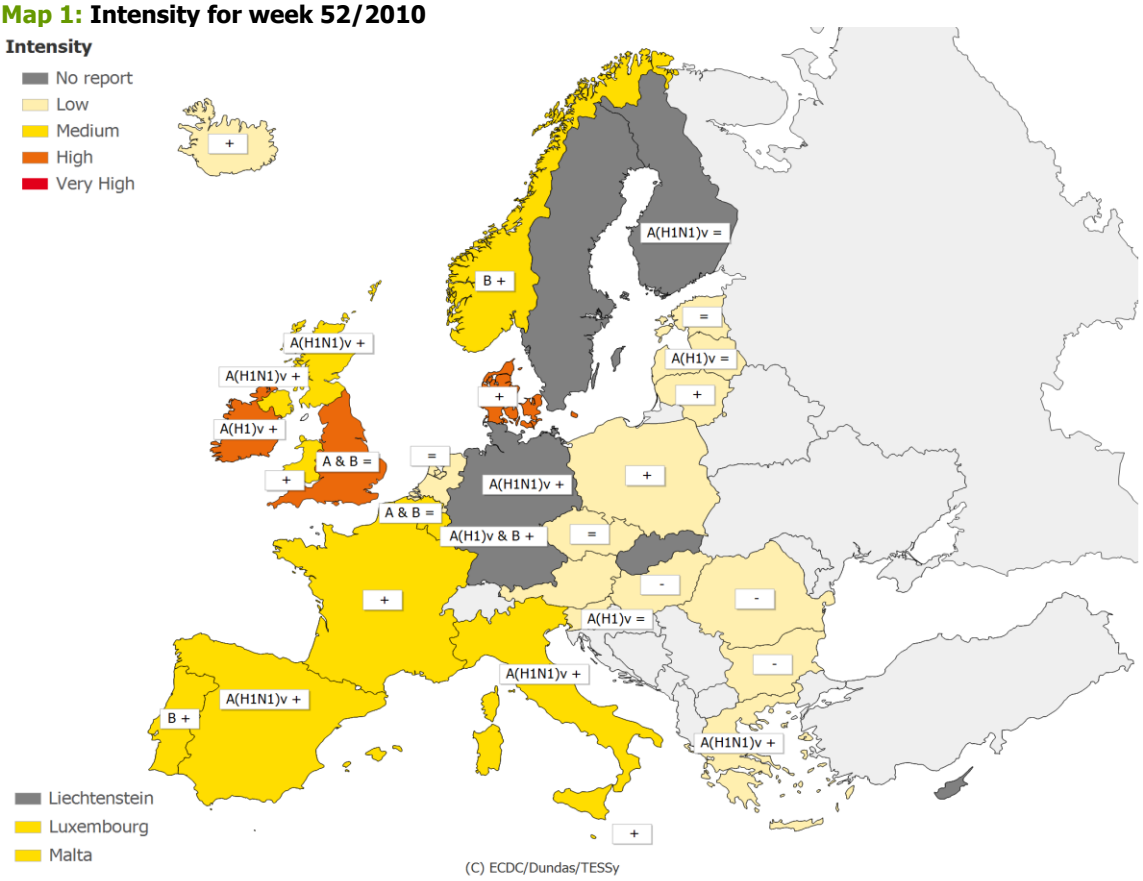
Weekly analysis – epidemiology

During week 52/2010, medium influenza activity was reported by Belgium, France, Italy, Luxembourg, Malta, Norway, Portugal, Spain and the UK (Northern Ireland, Scotland and Wales). Denmark, Ireland and the UK (England) reported high intensity. Fourteen countries experienced low intensity influenza activity (Table 1, Map 1).

Widespread activity was reported by seven countries and the UK (England and Wales). Regional activity was reported by Finland, Italy, Luxembourg and Spain and local activity by Germany, Malta and the UK (Northern Ireland and Scotland). Sporadic activity was reported by nine countries, and two countries (Austria and Bulgaria) reported no activity (Table 1, Map 2).

Compared with the previous week, a greater number of countries—six in week 51 and 15, including the UK (Northern Ireland, Wales and Scotland), in week 52—reported increasing trends for their clinical activity (Table 1, Map 2).

Map 1: Intensity for week 52/2010

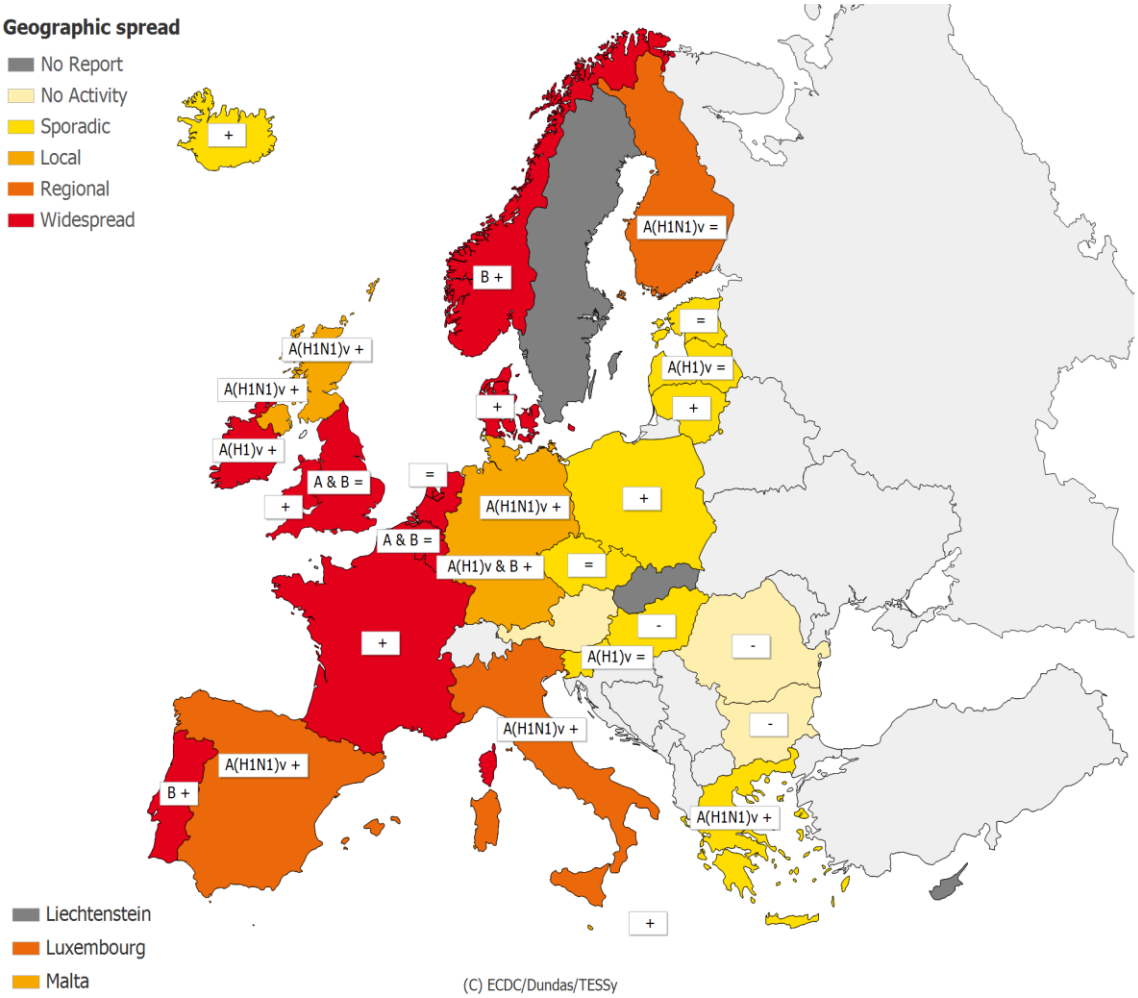


* A type/subtype is reported as dominant when > 40 % of all samples are positive for the type/subtype.

Legend:

Low	No influenza activity or influenza at baseline levels	-	Decreasing clinical activity
Medium	Usual levels of influenza activity	+	Increasing clinical activity
High	Higher than usual levels of influenza activity	=	Stable clinical activity
Very high	Particularly severe levels of influenza activity	**A & B**	Type A and B
		A(H1)v	Type A, Subtype H1v
		A(H1)v & B	Type B and Type A, Subtype H1v
		A(H1N1)v	Type A, Subtype H1N1v
		B	Type B

Map 2: Geographic spread for week 52/2010



* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

Legend:

No activity	No evidence of influenza virus activity (clinical activity remains at baseline levels)
Sporadic	Isolated cases of laboratory confirmed influenza infection
Local outbreak	Increased influenza activity in local areas (e.g. a city) within a region, or outbreaks in two or more institutions (e.g. schools) within a region (laboratory confirmed)
Regional activity	Influenza activity above baseline levels in one or more regions with a population comprising less than 50% of the country's total population (laboratory confirmed)
Widespread	Influenza activity above baseline levels in one or more regions with a population comprising 50% or more of the country's population (laboratory confirmed)

-	Decreasing clinical activity
+	Increasing clinical activity
=	Stable clinical activity
A & B	Type A and B
A(H1)v	Type A, Subtype H1v
A(H1)v & B	Type B and Type A, Subtype H1v
A(H1N1)v	Type A, Subtype H1N1v
B	Type B

Table 1: Epidemiological and virological overview by country, week 52/2010

Country	Intensity	Geographic spread	Trend	No. of sentinel swabs	Dominant type	Percentage positive*	ILI per 100.000	ARI per 100.000	Epidemiological overview	Virological overview
Austria	Low	No activity	No information available	7	None	42.9	-	7.2	Graphs	Graphs
Belgium	Medium	Widespread	Stable	30	AB	76.7	252.8	1543.8	Graphs	Graphs
Bulgaria	Low	No activity	Decreasing	-	None	0.0	-	666.9	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	Sporadic	Stable	7	None	14.3	18.1	673.1	Graphs	Graphs
Denmark	High	Widespread	Increasing	15	None	40.0	121.4	-	Graphs	Graphs
Estonia	Low	Sporadic	Stable	15	None	**20.0**	6.6	332.0	Graphs	Graphs
Finland	No information available	Regional	Stable	29	A(H1N1) 2009	37.9	-	-	Graphs	Graphs
France	Medium	Widespread	Increasing	137	None	43.1	-	2426.7	Graphs	Graphs
Germany	Low	Local	Increasing	37	A(H1N1) 2009	43.2	-	950.3	Graphs	Graphs
Greece	Low	Sporadic	Increasing	1	A(H1N1) 2009	0.0	123.1	-	Graphs	Graphs
Hungary	Low	Sporadic	Decreasing	31	-	3.2	66.0	-	Graphs	Graphs
Iceland	Low	Sporadic	Increasing	18	-	11.1	4.1	-	Graphs	Graphs
Ireland	High	Widespread	Increasing	0	A(H1N1) 2009	0.0	120.6	-	Graphs	Graphs
Italy	Medium	Regional	Increasing	39	A(H1N1) 2009	30.8	378.6	-	Graphs	Graphs
Latvia	Low	Sporadic	Stable	0	A(H1N1) 2009	0.0	0.0	778.0	Graphs	Graphs
Lithuania	Low	Sporadic	Increasing	-	-	0.0	11.7	479.8	Graphs	Graphs
Luxembourg	Medium	Regional	Increasing	31	A(H1N1) 2009/B	51.6	-*	-*	Graphs	Graphs
Malta	Medium	Local	Increasing	-	-	0.0	-*	-*	Graphs	Graphs
Netherlands	Low	Widespread	Stable	17	-	64.7	36.4	-	Graphs	Graphs
Norway	Medium	Widespread	Increasing	8	B	62.5	60.1	-	Graphs	Graphs
Poland	Low	Sporadic	Increasing	5	None	40.0	65.1	-	Graphs	Graphs
Portugal	Medium	Widespread	Increasing	5	B	40.0	75.2	-	Graphs	Graphs
Romania	Low	No activity	Decreasing	19	None	10.5	13.6	591.3	Graphs	Graphs
Slovakia				1	None	0.0	-	-	Graphs	Graphs
Slovenia	Low	Sporadic	Stable	23	A(H1N1) 2009	43.5	15.9	1333.2	Graphs	Graphs
Spain	Medium	Regional	Increasing	259	A(H1N1) 2009	53.7	152.2	-	Graphs	Graphs
Sweden				-	-	0.0	-	-		
UK - England	High	Widespread	Stable	0	AB	0.0	98.4	598.9	Graphs	Graphs
UK - Northern Ireland	Medium	Local	Increasing	3	A(H1N1) 2009	66.7	179.5	461.7	Graphs	Graphs
UK - Scotland	Medium	Local	Increasing	32	A(H1N1) 2009	81.3	20.3	234.5	Graphs	Graphs
UK - Wales	Medium	Widespread	Increasing	-	-	0.0	89.2	-	Graphs	Graphs
Europe				769		45.8				Graphs

**Incidence per 100 000 is not calculated for these countries as no population denominator is provided.*
Note: Liechtenstein is not reporting to the European Influenza Surveillance Network

Description of the system

This surveillance is based on nationally organized sentinel networks of physicians, mostly general practitioners (GPs), covering at least 1–5% of the population in their countries. All EU/EEA Member States (except Liechtenstein) are participating. Depending on their country's choice, each sentinel physician reports the weekly number of patients seen with influenza-like illness (ILI), acute respiratory infection (ARI) or both to a national focal point. From the national level, both numerator and denominator data are then reported to the European Surveillance System (TESSy) database. Additional semi-quantitative indicators of intensity, geographic spread and trend of influenza activity at the national level are also reported.

Virological surveillance

Weekly analysis – virology

In week 52/2010, virological data were reported by 24 countries and the UK (Northern Ireland and Scotland). Sentinel physicians collected 769 swabs with an increased percentage (45.8 %) testing positive for influenza virus compared with the previous week (33.5%) (Tables 1 and 2, Figure 3). In addition, 2404 non-sentinel source specimens (i.e. specimens collected for diagnostic purpose in hospitals) were reported positive for influenza virus. Compared with the previous week, the number of specimens positive for influenza decreased in sentinel practices and increased in non-sentinel sources. This divergence might be explained by differences in reporting in both systems during holidays.

Of the 2756 influenza viruses detected during week 52/2010, 2093 (76%) were type A and 663 (24%) were type B. The latter virus was reported as dominant in Norway and Portugal (Table 1). Of the 992 influenza A viruses that were sub-typed, 976 (98.4%) were A(H1N1) 2009 and 16 (1.6%) were A(H3) virus (Table 2).

Since week 40/2010, of the 7854 influenza detections in sentinel and non-sentinel specimens, 5764 (73%) were influenza A and 2090 (27%) influenza B viruses. Of 2959 influenza A viruses sub-typed, 2830 (95.6%) were A(H1N1) 2009 and 129 (4.4%) were A(H3) viruses (Table 2). Trends of virological detections since week 40/2010 are shown in Figures 1–3.

Since week 40/2010, 236 influenza viruses from sentinel and non-sentinel specimens have been characterised antigenically (Table 3): 99 as A/California/7/2009 (H1N1)-like; 42 as A(H3)/Perth/16/2009 (H3N2)-like; 89 as B/Brisbane/60/2008-like (Victoria lineage); and six as B/Florida/4/2006-like (Yamagata lineage) (Figure 4).

More details on circulating viruses can be found in the report prepared by the Community Network of Reference Laboratories coordination team. Also, a detailed analysis of the viruses isolated in the UK was published this week in Eurosurveillance indicating no evidence of any change in the A(H1N1)2009 or B viruses in that country and a good match with the seasonal vaccine.

In week 52/2010, there was a decrease in respiratory syncytial virus detections, but it may be premature to conclude that the circulation of the virus is declining (Figure 5).

Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2010–52/2010

	Current Period		Season	
Virus type/subtype	**Sentinel**	**Non-Sentinel**	**Sentinel**	**Non-Sentinel**
Influenza A	280	1813	1411	4353
A (H1) 2009	209	767	1208	1622
A (subtyping not performed)	61	1040	132	2673
A (not subtypable)	0	0	0	0
A (H3)	10	6	71	58
A (H1)	0	0	0	0
Influenza B	72	591	565	1525
Total Influenza	**352**	**2404**	**1976**	**5878**

Note: A(pandemic H1), A(H3) and A(H1) includes both N-subtyped and not N-subtyped viruses

Figure 1: Number of sentinel specimens positive for influenza, by type, subtype and by week of report, week 40/2010–52/2010

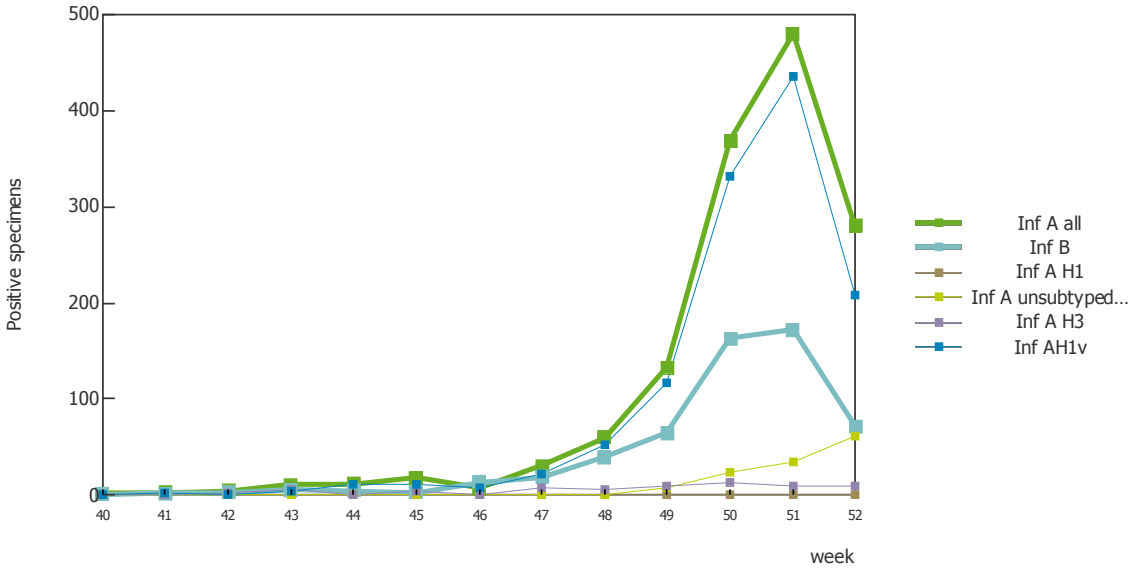


Figure 2: Number of non-sentinel specimens positive for influenza by type, subtype and week of report, week 40/2010–52/2010

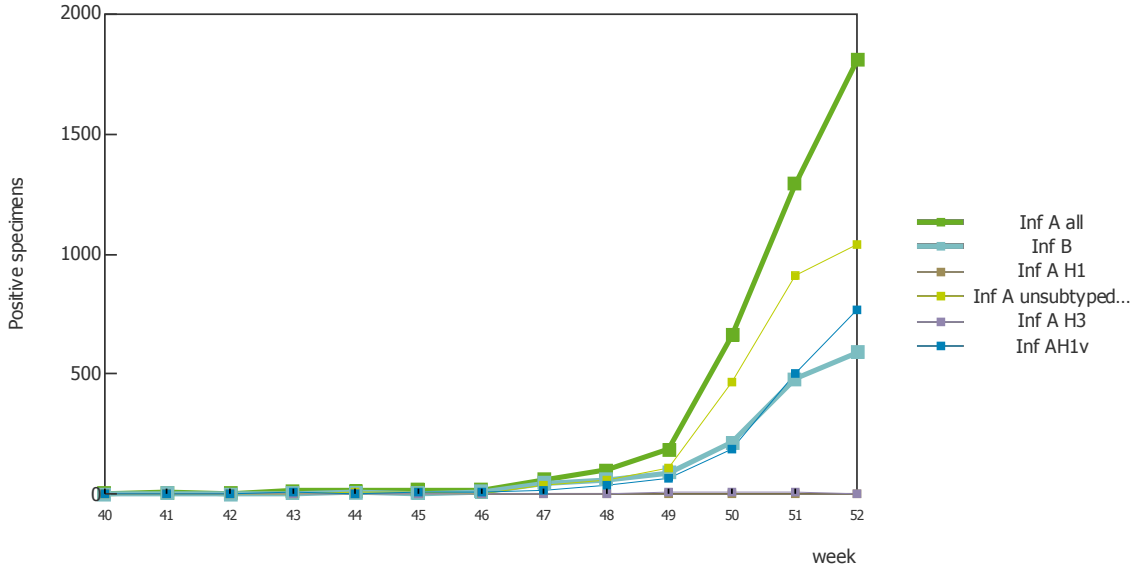


Figure 3: Proportion of sentinel samples positive for influenza, week 40/2010–52/2010

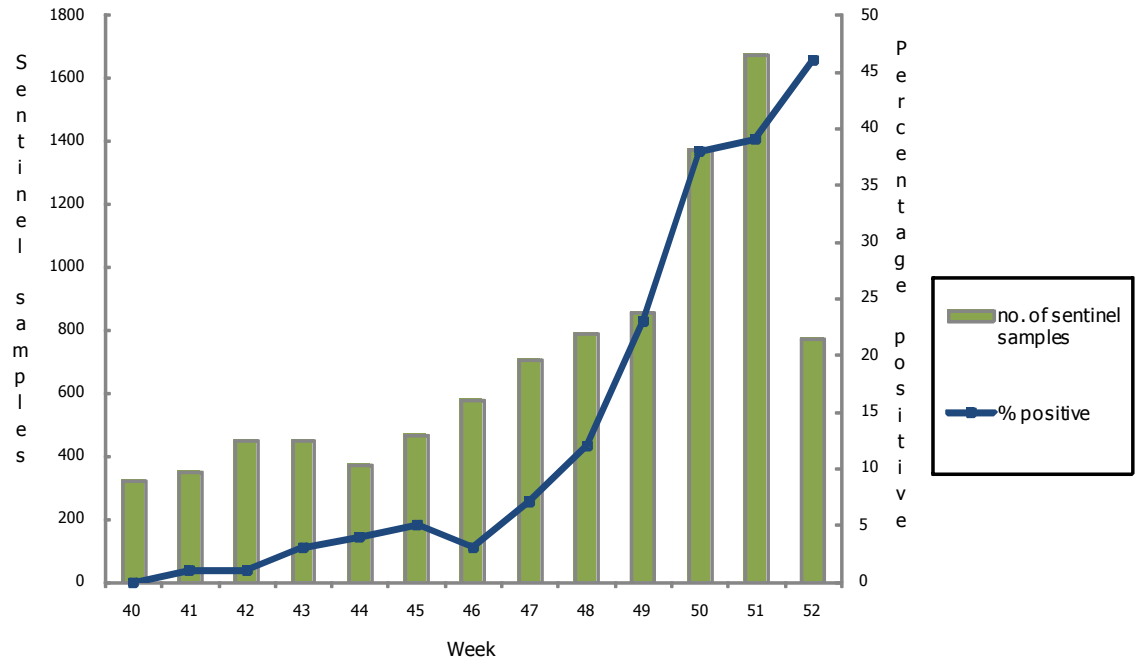


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, week 40/2010–52/2010

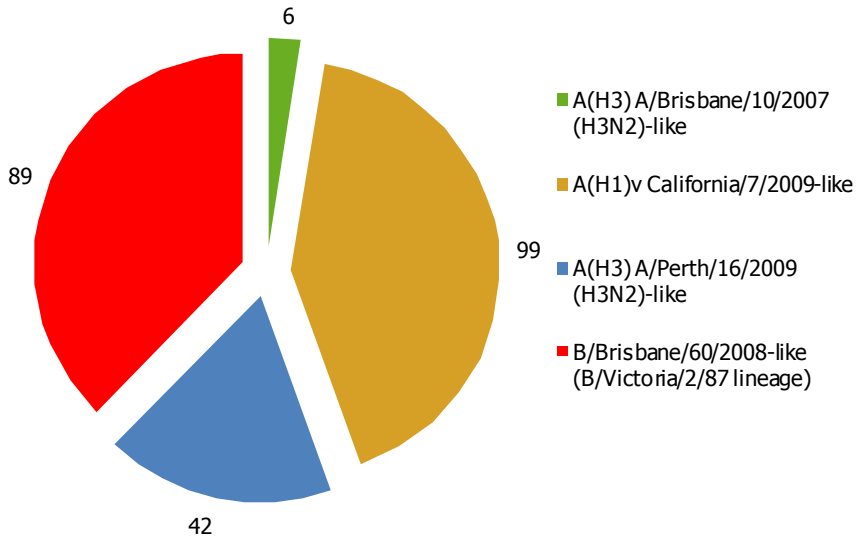
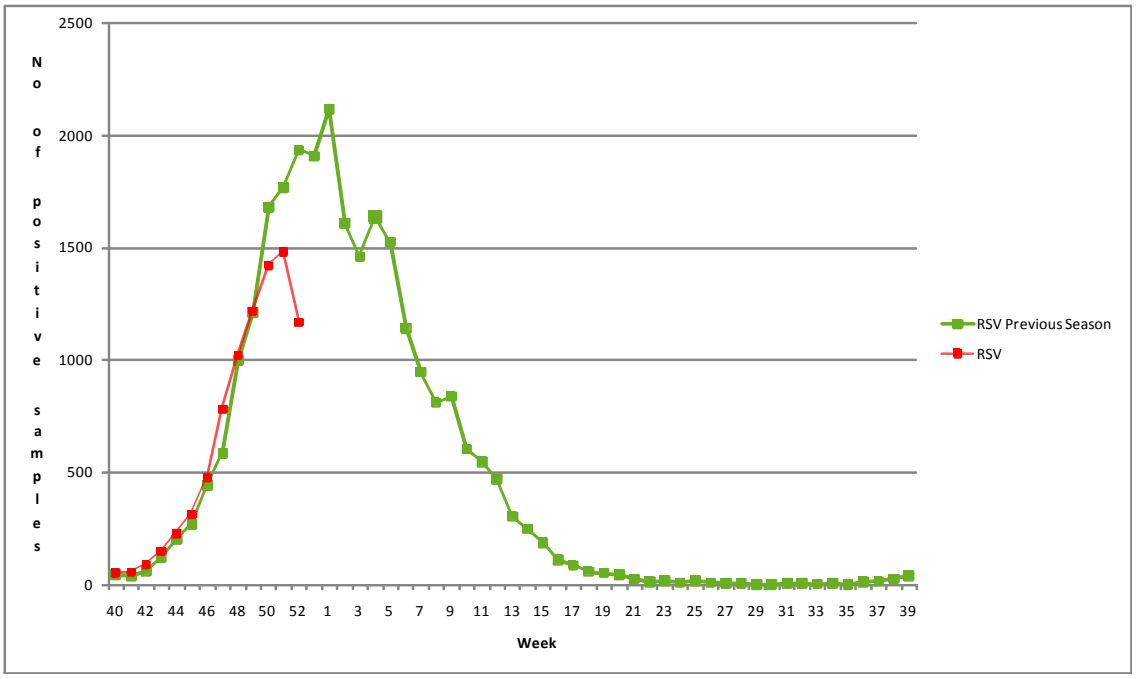


Figure 5: Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, week 40/2010–52/2010



Description of the system

According to the nationally defined sampling strategy, sentinel physicians take nasal or pharyngeal swabs from patients with influenza-like illness (ILI), acute respiratory infection (ARI) or both and send the specimens to influenza-specific reference laboratories for virus detection, (sub-)typing, antigenic or genetic characterisation and antiviral susceptibility testing.

For details on the current virus strains recommended by WHO for vaccine preparation, click here.

Hospital surveillance – severe acute respiratory infection (SARI)

Weekly analysis – SARI

During week 52/2010, 56 SARI cases were reported by six countries (Table 3). Only three countries—Belgium, Romania and Slovakia—were collecting syndromic sari cases; the remainder of the countries are still reporting only influenza confirmed hospitalised cases or severe influenza cases admitted to ICU, as in France.

Three cases were reported by Austria; 19 by Belgium; 16 by Spain; six by France; four by Portugal; and eight by Romania. Of the 26 cases that tested positive for influenza, 22 were infected by A(H1N1) 2009, three by an influenza A virus (not further sub-typed) and one by a B virus. Portugal, Spain and Romania each reported one fatality; the fatality in Portugal was associated with A(H1N1) 2009 virus infection, the one in Spain with influenza A infection (sub-type unknown) and no influenza virus was detected in the fatality reported by Romania. Since week 40/2010, 12 deaths were recorded among reported SARI cases.

In addition, comments on SARI cases were sent by three countries (see country comments).

Table 3: Cumulative number of SARI cases, week 40/2010–week 52/2010

Country	Number of cases	Incidence of SARI cases per 100,000 population	Number of fatal cases reported	Incidence of fatal cases per 100,000 population	Estimated population covered
Austria	3				
Belgium	407				
Spain	88		3		
France	17		1		
Portugal	17		4		
Romania	79	1.23	4	0.06	6413821
Slovakia	2				
Total	613		12		

Figure 6: Number of SARI cases by week of onset, week 40/2010–week 52/2010

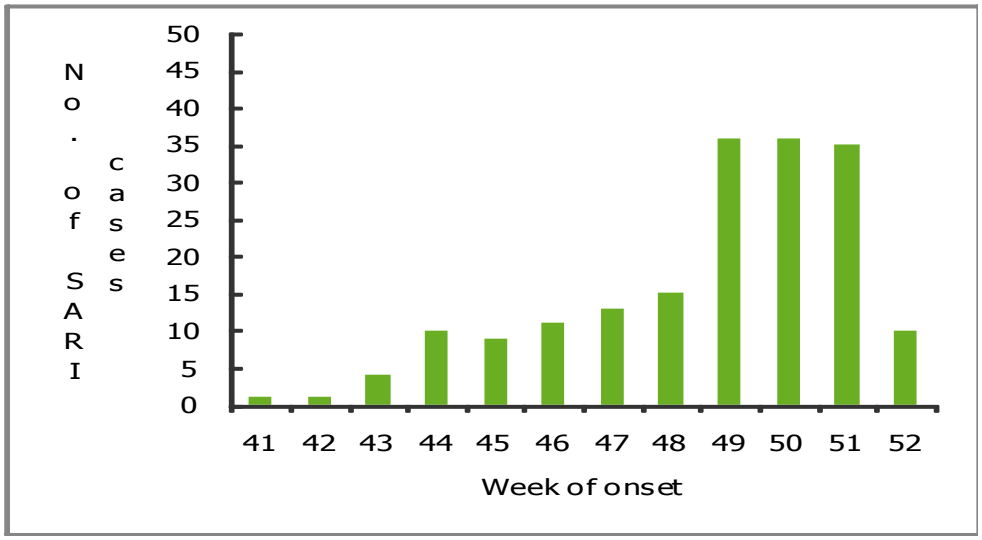


Table 4: Number of SARI cases by age and gender, week 52/2010

Age groups	Male	Female	Unknown
Under 2	8	6	
2-17	8	5	
18-44	8	3	
45-59	8	6	
>=60	3	1	
Total	35	21	

Table 5: Number of SARI cases by influenza type and subtype, week 52/2010

Virus type/subtype	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	25	121
A (pandemic H1N1)	22	96
A(subtyping not performed)	3	12
A(H3)		2
A(H1)		11
A(H5)		
Influenza B	1	6
Unknown	30	482
Total	56	637

Table 6: Number of SARI cases by antiviral treatment, week 52/2010

Antiviral treatment	Number of patients who received prophylaxis	Number of patients who received anti-viral treatment
Oseltamivir	1	87
Zanamivir		3
Other (or combinations with other)	1	2
Unknown	512	455
None	99	66
Total	613	613

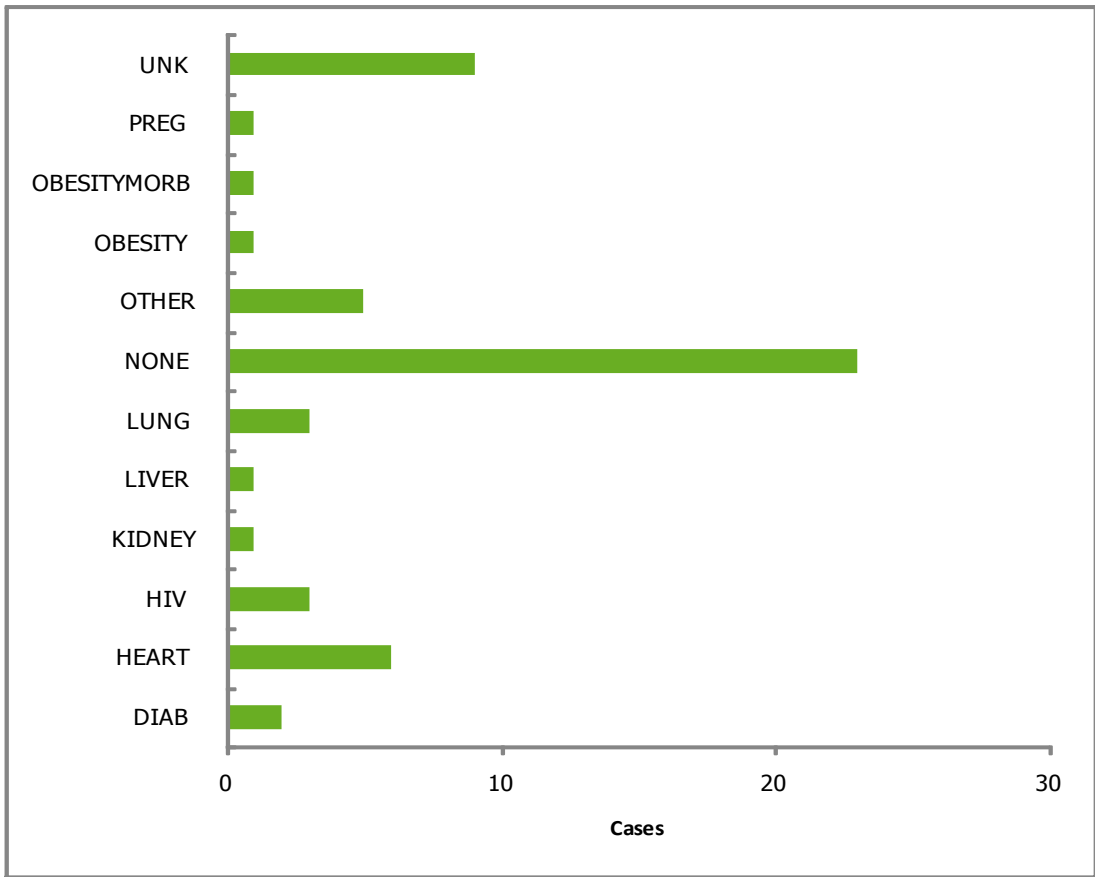
Table 7: Number of SARI cases by level of care and respiratory support, week 52/2010

Respiratory support	ICU	Inpatient ward	Other	Unknown
No respiratory support necessary	14	17	203	
Oxygen therapy	32	38	162	
Ventilator	46	2	5	1
Respiratory support given unknown	38	1	34	20

Table 8: Number of SARI cases by vaccination status, week 52/2010

Vaccination Status	Number Of Cases	Percentage of cases
Seasonal 2010 vaccination	1	2
Unknown	25	44.6
TOTAL	613	

Figure 7: Number of SARI cases by underlying condition, week 52/2010



Note: The data is collected for asthma, cancer, diabetes, chronic heart disease, HIV/other immune deficiency, kidney-related conditions, liver-related conditions, chronic lung disease, neurocognitive disorder (including seizure), neuromuscular disorder, obesity (BMI between 30 and 40), morbid obesity (BMI above 40), pregnancy, other, underlying condition unknown and for no underlying condition.

Table 9: Number of underlying conditions in SARI cases by age group, week 52/2010

Underlying condition/risk factor	0-11 months	1-4 years	5y-14	15-24	25-64	>=65
Asthma		1	1		1	
Diabetes					5	2
Chronic heart disease	3				11	7
Chronic lung disease	1	1		1	7	1
Pregnancy				3	5	
Underlying condition unknown	1	3	1	4	43	2
Other (including all other conditions)	164	121	40	4	110	69

Country comments

In addition, comments on SARI cases and the impact on hospital services were sent by the following:

Czech Republic: Two SARI cases—a 54-year-old male with no risk condition and 41-year-old female with moderate asthma—with laboratory confirmed influenza A(H1N1) 2009 virus and both with bilateral pneumonia were reported.

Denmark: Since week 49/2010, a total of 12 influenza patients have been reported by intensive care units (ICUs) in Denmark: four women and eight men. The median age was 52 years (range 15–70 years). Nine patients had influenza A, six of whom were further typed and had subtype A(H1N1) 2009. Two patients had influenza B.

Four patients were previously healthy people: a 59-year-old male, a 30 year–old female, a 22-year-old male and a 15–year-old girl. For eight patients, one or more underlying illnesses were reported. Chronic obstructive lung disease, hypertension and chronic lymphatic leukemia were each mentioned twice. Other underlying illnesses included Wegener's granulomatosis, obesity, alcoholism, kidney failure and asthma. There were no pregnant women among the 12 patients.

Two patients were receiving extracorporeal membrane oxygenation treatment (ECMO).

UK (England): Due to bank holidays in week 52/2010, general practitioner (GP) surgeries were only open for three days, which will have impacted GP consultation rates, so data should be interpreted cautiously. A similar dip in consultation rates is often seen at this time of year. The following is a list of the number of patients in England with confirmed or suspected influenza in critical care beds by age of patient:

- Week ending 15 Dec 2010: <5=10; 5-15=9; 16-64=141; 65+=22. Total=182;
- Week ending 23 Dec 2010: <5=26; 5-15=17; 16-64=366; 65+=51. Total=460;
- Week ending 30 Dec 2010: <5=42; 5-15=24; 16-64=586; 65+=86. Total=738;
- Week ending 6 Jan 2010: <5=30; 5-15=17; 16-64=640; 65+=96. Total=783.

The overall number of severely ill patients with confirmed or suspected flu in critical care has continued to rise. As of 06 January 2011, there were 783 patients with confirmed or suspected influenza in NHS critical care beds in England. These patients occupied 22.5 % of available critical care beds nationally.

For further information, click here http://winterwatch.dh.gov.uk/

UK (Scotland): Increasing number of SARI cases attributable to influenza A H1N1 (2009 strain).

The report text was written by an editorial team at the European Centre for Disease Prevention and Control (ECDC): Eeva Broberg, Flaviu Plata, Phillip Zucs and René Snacken. The bulletin text was reviewed by the Community Network of Reference Laboratories for Human Influenza in Europe (CNRL) coordination team: Adam Meijer, Rod Daniels, John McCauley and Maria Zambon. On behalf of the EISN members the bulletin text was reviewed by Bianca Snijders (RIVM Bilthoven, The Netherlands) and Thedi Ziegler (National Institute for Health and Welfare, Finland)