

## SURVEILLANCE REPORT

### Weekly influenza surveillance overview

27 May 2011

## Main surveillance developments in week 20/2011 (16 May – 22 May 2011)

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

- The influenza season is coming to an end in Europe with all countries reporting low intensity and only five countries reporting sporadic activity.
- For the second week, no influenza virus has been detected from sentinel sources. Seven influenza A and two influenza B viruses have been detected in non-sentinel specimens.
- One SARI case unrelated to influenza virus infection was reported by Romania.

**Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI):** Low influenza activity was reported by 24 countries, associated with sporadic cases or no geographic spread. For more information, [click here](#).

**Virological surveillance:** No influenza virus was detected in specimens collected by sentinel practitioners. Only nine influenza viruses were detected from non-sentinel sources. For more information, [click here](#).

**Hospital surveillance of severe acute respiratory infection (SARI):** One SARI case, unrelated to influenza virus infection, was notified by Romania. For more information, [click here](#).

# Sentinel surveillance (ILI/ARI)

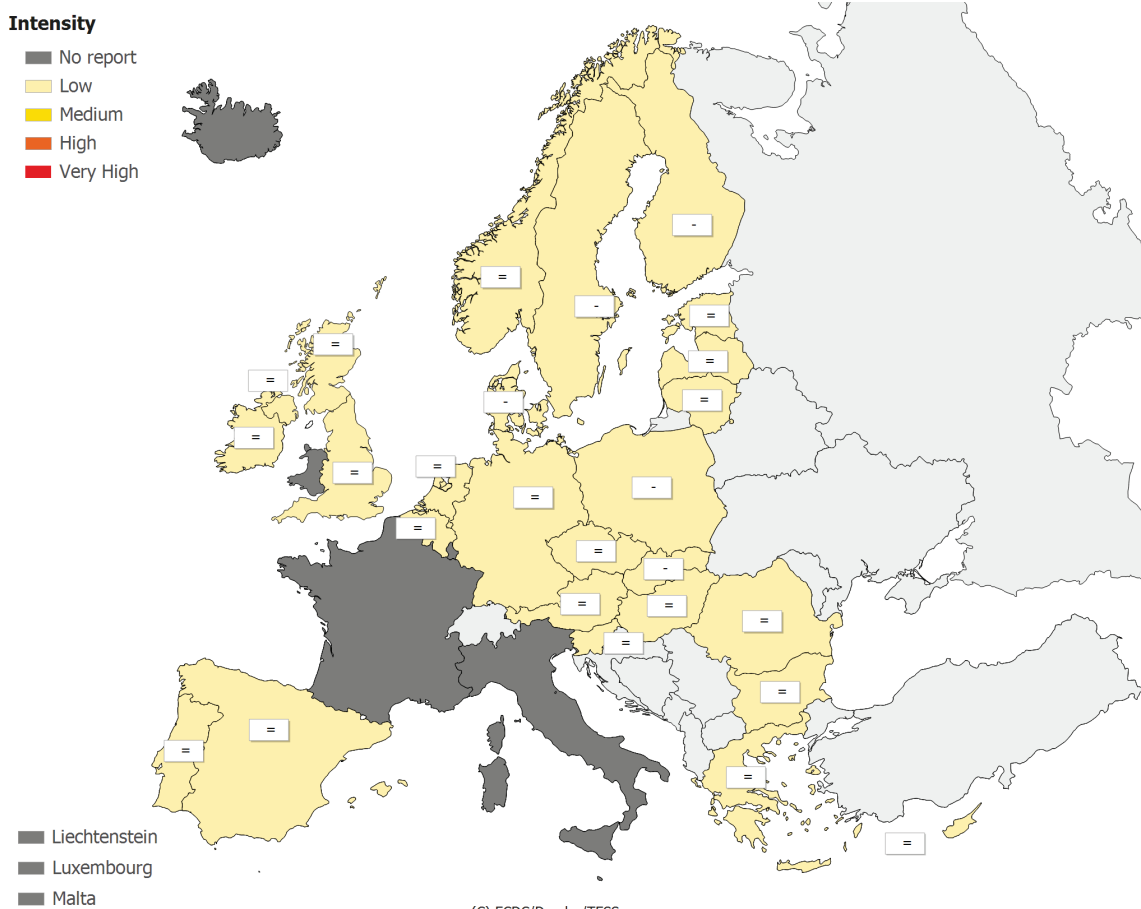
## Weekly analysis – epidemiology

During week 20/2011, all 24 reporting countries experienced low intensity of influenza activity (Table 1, Map 1)

In terms of geographic spread, sporadic activity was reported by five countries and the UK (Scotland). No activity was reported by the remaining 18 countries and the UK (England and Northern Ireland).

Stable or decreasing trends were reported by all 24 countries (Table 1, Map 2).

**Map 1: Intensity for week 20/2011**



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

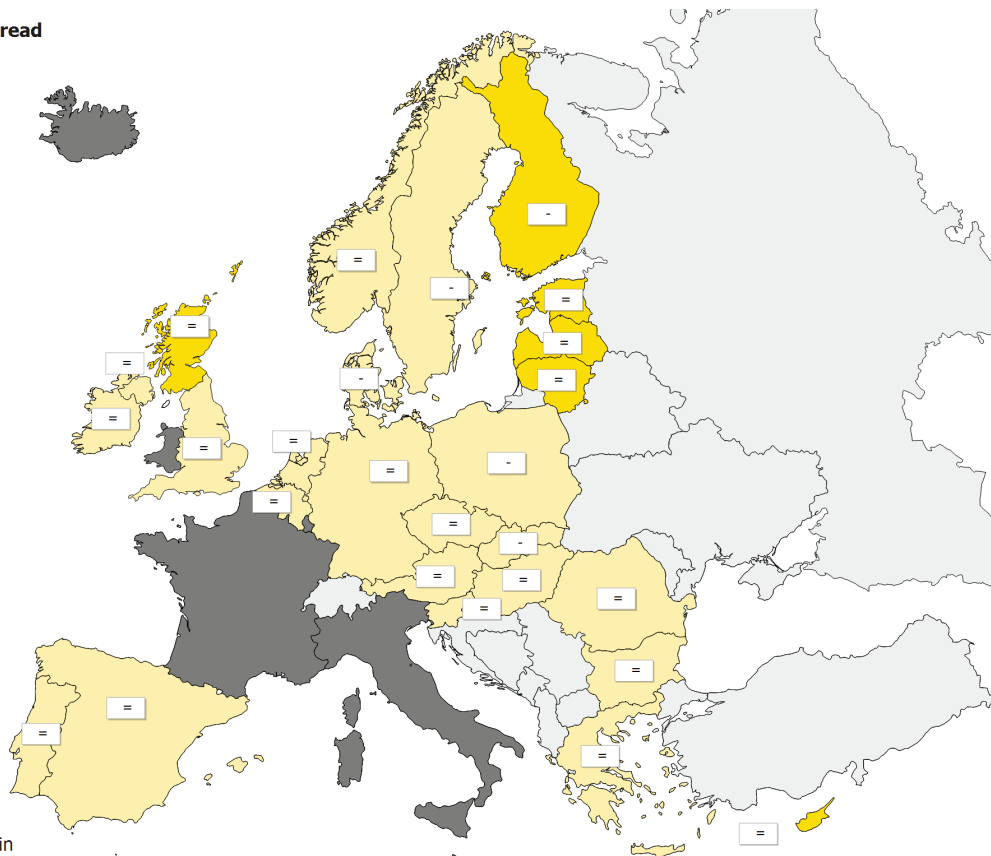
Legend:

<b>No report</b>	Intensity level was not reported	+	Increasing clinical activity
<b>Low</b>	No influenza activity or influenza at baseline levels	-	Decreasing clinical activity
<b>Medium</b>	Usual levels of influenza activity	=	Stable clinical activity
<b>High</b>	Higher than usual levels of influenza activity		
<b>Very high</b>	Particularly severe levels of influenza activity		

**Map 2: Geographic spread for week 20/2011**

**Geographic spread**

- No Report
- No Activity
- Sporadic
- Local
- Regional
- Widespread



- Liechtenstein
- Luxembourg
- Malta

(C) ECDC/Dundas/TESSy

\* 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:

<b>No report</b>	Activity level was not reported	+	Increasing clinical activity
<b>No activity</b>	No evidence of influenza virus activity (clinical activity remains at baseline levels)	-	Decreasing clinical activity
<b>Sporadic</b>	Isolated cases of laboratory confirmed influenza infection	=	Stable clinical activity
<b>Local outbreak</b>	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)		
<b>Regional activity</b>	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)		
<b>Widespread</b>	Influenza activity above baseline levels in one or more regions with a population comprising 50% or more of the country's population (laboratory confirmed)		

**Table 1: Epidemiological and virological overview by country, week 20/2011**

Country	Intensity	Geographic spread	Trend	No. of sentinel specimens	Dominant type	Percentage positive	ILI per 100 000	ARI per 100 000	Epidemiological overview	Virological overview
Austria	Low	No activity	Stable	0	None	0.0	-	-	Graphs	Graphs
Belgium	Low	No activity	Stable	3	None	0.0	23.1	1232.3	Graphs	Graphs
Bulgaria	Low	No activity	Stable	-	None	0.0	-	419.5	Graphs	Graphs
Cyprus	Low	Sporadic	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic	Low	No activity	Stable	-	-	0.0	12.6	605.1	Graphs	Graphs
Denmark	Low	No activity	Decreasing	-	-	0.0	6.1	-	Graphs	Graphs
Estonia	Low	Sporadic	Stable	0	None	0.0	3.7	196.0	Graphs	Graphs
Finland	Low	Sporadic	Decreasing	14	None	0.0	-	-	Graphs	Graphs
France				-	-	0.0	-	-		
Germany	Low	No activity	Stable	3	None	0.0	-	492.9	Graphs	Graphs
Greece	Low	No activity	Stable	0	-	0.0	34.3	-	Graphs	Graphs
Hungary	Low	No activity	Stable	-	None	0.0	12.3	-	Graphs	Graphs
Iceland				0	-	0.0	-	-	Graphs	Graphs
Ireland	Low	No activity	Stable	4	None	0.0	5.3	-	Graphs	Graphs
Italy				-	-	0.0	-	-		
Latvia	Low	Sporadic	Stable	0	None	0.0	-*	-*	Graphs	Graphs
Lithuania	Low	Sporadic	Stable	0	None	0.0	0.0	276.3	Graphs	Graphs
Luxembourg				-	-	0.0	-	-		
Malta				-	-	0.0	-	-		
Netherlands	Low	No activity	Stable	2	None	0.0	12.9	-	Graphs	Graphs
Norway	Low	No activity	Stable	0	None	0.0	11.4	-	Graphs	Graphs
Poland	Low	No activity	Decreasing	1	None	0.0	15.6	-	Graphs	Graphs
Portugal	Low	No activity	Stable	0	None	0.0	0.0	-	Graphs	Graphs
Romania	Low	No activity	Stable	4	None	0.0	0.5	644.7	Graphs	Graphs
Slovakia	Low	No activity	Decreasing	0	None	0.0	100.9	1144.6	Graphs	Graphs
Slovenia	Low	No activity	Stable	0	None	0.0	0.0	663.9	Graphs	Graphs
Spain	Low	No activity	Stable	14	None	0.0	4.4	-	Graphs	Graphs
Sweden	Low	No activity	Decreasing	1	None	0.0	0.0	-	Graphs	Graphs
UK - England	Low	No activity	Stable	6	None	0.0	1.7	282.8	Graphs	Graphs
UK - Northern Ireland	Low	No activity	Stable	0	-	0.0	6.8	236.5	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	-	-	0.0	1.7	130.4	Graphs	Graphs
UK - Wales				-	-	0.0	-	-		
Europe				52		0.0				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

Surveillance is based on nationally organised sentinel networks of physicians, mostly general practitioners (GPs), covering at least 1 to 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 20/2011, 22 countries reported virological data. For the second week since the beginning of the season, none of the 52 sentinel specimens collected were positive for influenza virus. Of the non-sentinel source specimens (i.e. specimens collected for diagnostic purposes in hospitals), nine were reported positive for influenza virus; seven of type A and two of type B. Only one of the type A viruses was sub-typed and it was an A(H1)2009 virus.

Since week 40/2010, of the 57 388 influenza detections in sentinel and non-sentinel specimens, 37 827 (65.9%) were influenza A and 19 561 (34.1%) were influenza B viruses. Of 27 253 sub-typed influenza A viruses, 26 539 (97.4%) were A(H1)2009 and 714 (2.6%) were A(H3) viruses (Table 2). Trends in virological detections since week 40/2010 are shown in Figures 1–3.

Since week 40/2010, 4 535 influenza viruses from sentinel and non-sentinel specimens have been characterised antigenically (Figure 4): 2 267 as A/California/7/2009 (H1N1)-like; 1 946 as B/Brisbane/60/2008-like (Victoria lineage), 180 as B/Florida/4/2006-like (Yamagata lineage), 145 as A/Perth/16/2009 (H3N2)-like and six as B/Bangladesh/3333/2007-like (B/Yamagata/16/88 lineage).

Since week 40/2010, 21 countries have reported antiviral resistance data to TESSy (Table 3). One hundred and eleven (3.2%) of 3 433 influenza A(H1N1)2009 viruses tested were resistant to oseltamivir but all viruses tested remained sensitive to zanamivir. All the resistant viruses carried the NA H275Y substitution. Seventeen of 58 resistant viruses, in patients for whom information about possible exposure to antivirals was available, were from patients who had not been treated with oseltamivir. These patients were probably infected with resistant viruses carrying the NA H275Y substitution.

More details on characterisation of circulating viruses can be found in the [April report](#) prepared by the Community Network of Reference Laboratories (CNRL) coordination team. The viruses circulating this season remain well-matched with the 2010/11 seasonal vaccine viruses.

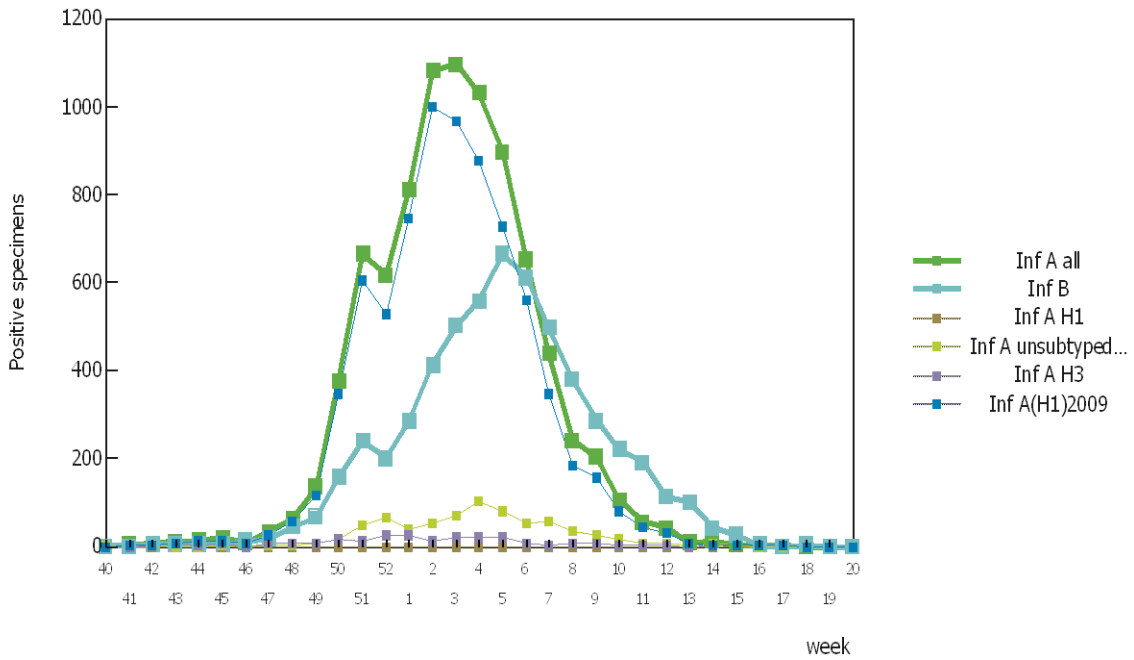
In week 20/2011, respiratory syncytial virus detections were at very low levels in eight reporting countries (Figure 5).

**Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2010–20/2011**

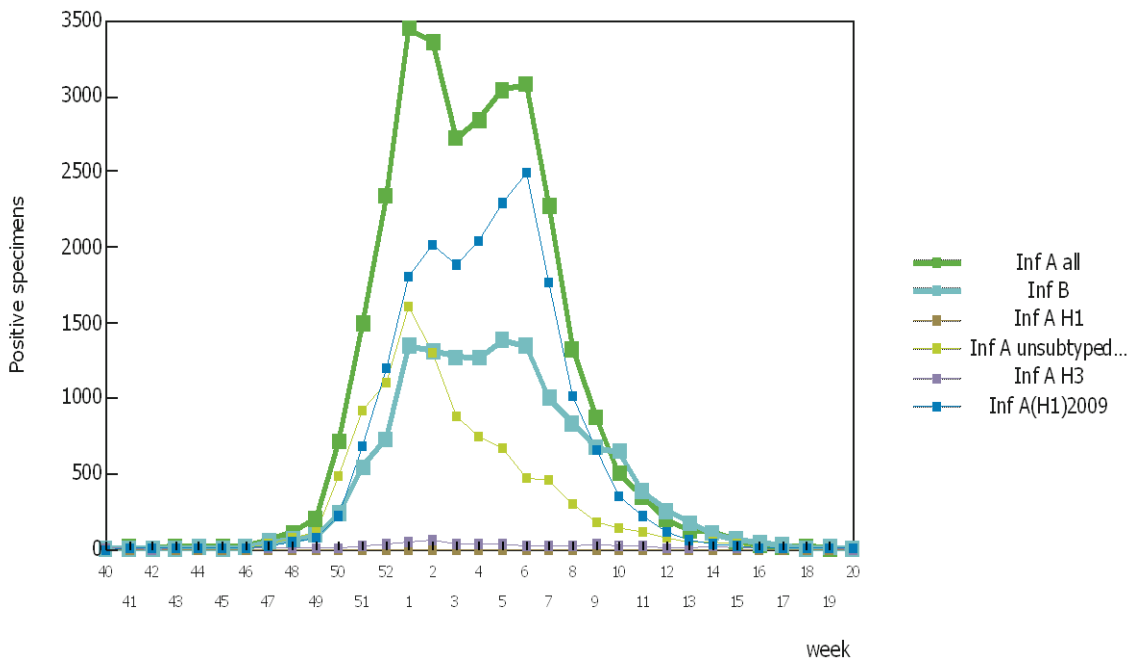
Virus type/subtype	Current Period		Season	
	Sentinel	Non-sentinel	Sentinel	Non-sentinel
Influenza A	0	7	8365	29462
A(H1)2009	0	1	7445	19094
A (subtyping not performed)	0	6	693	9881
A (not subtypable)	0	0	0	0
A (H3)	0	0	227	487
A (H1)	0	0	0	0
Influenza B	0	2	5665	13896
<b>Total Influenza</b>	<b>0</b>	<b>9</b>	<b>14030</b>	<b>43358</b>

Note: A(H1)2009, A(H3) and A(H1) includes both N-subtyped and non-N-subtyped viruses

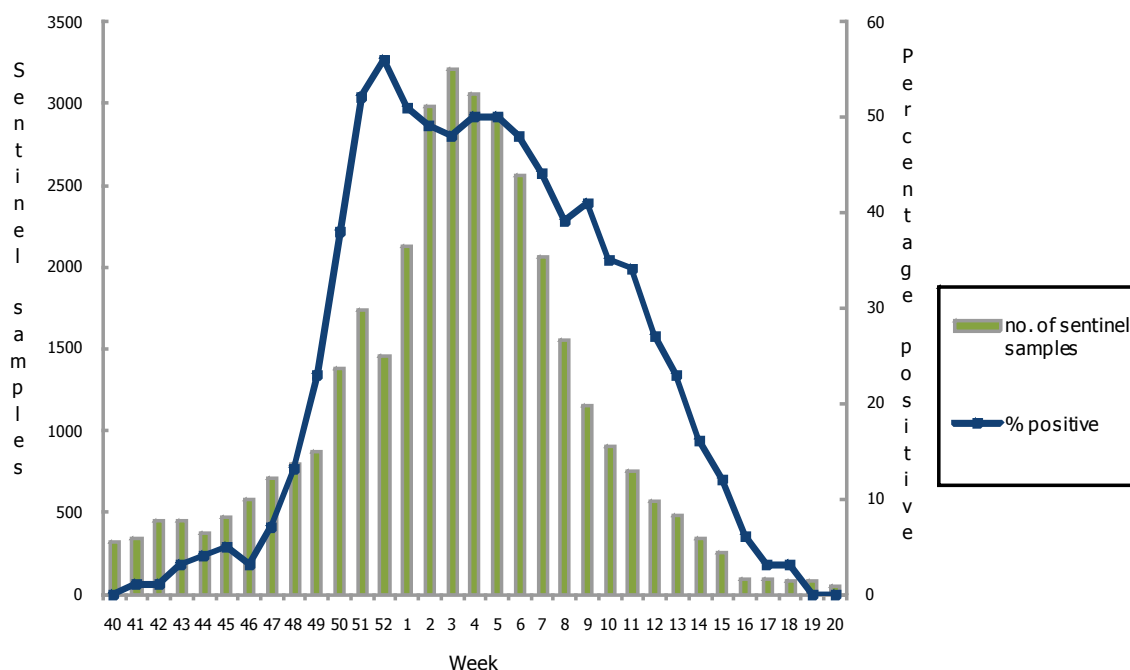
**Figure 1: Number of sentinel specimens positive for influenza, by type, subtype and by week of report, weeks 40/2010–20/2011**



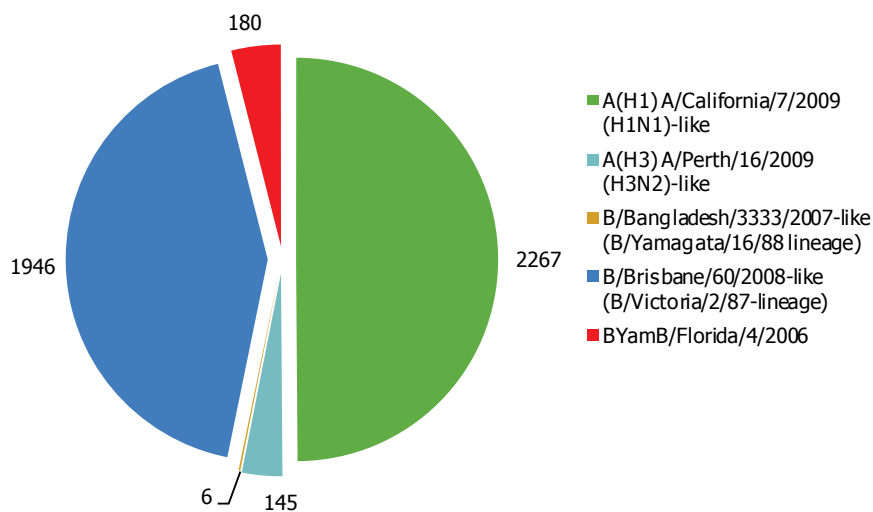
**Figure 2: Number of non-sentinel specimens positive for influenza by type, subtype and week of report, weeks 40/2010–20/2011**



**Figure 3: Proportion of sentinel samples positive for influenza, weeks 40/2010–20/2011**



**Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2010–20/2011**



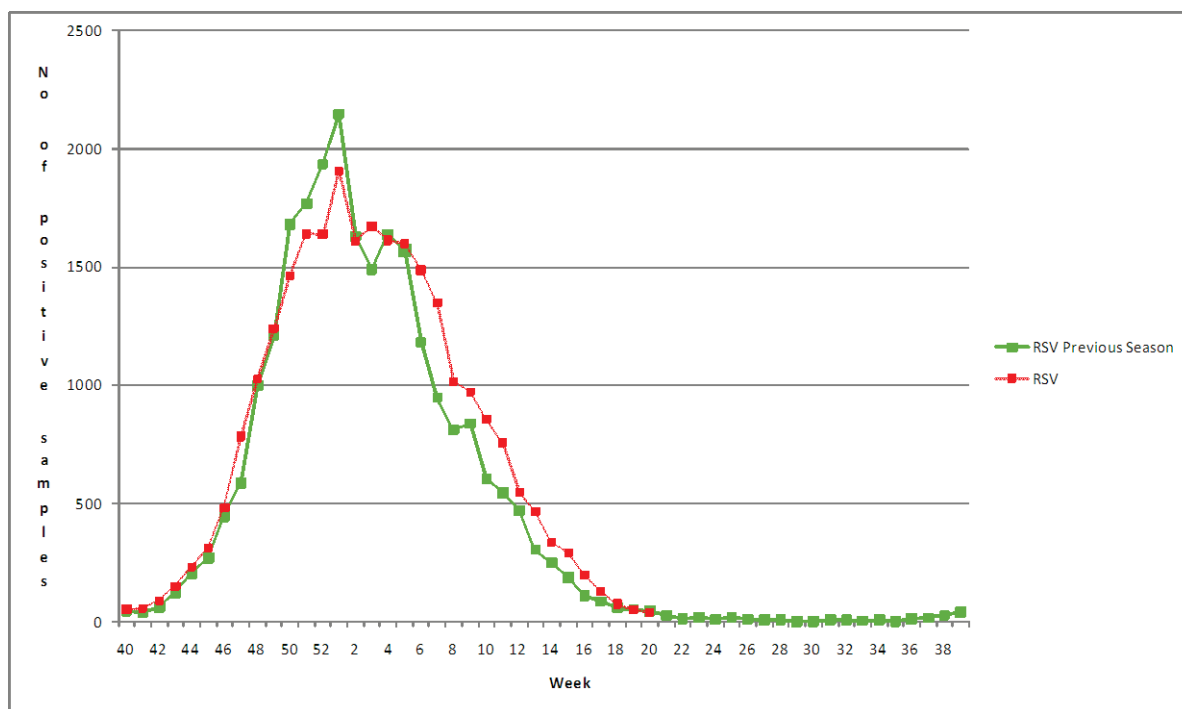


**Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2010–20/2011**

Virus type and subtype	Resistance to neuraminidase inhibitors				Resistance to M2 inhibitors	
	Oseltamivir		Zanamivir		Isolates tested	Resistant n (%)
	Isolates tested	Resistant n (%)	Isolates tested	Resistant n (%)		
A(H3)	90	0	88	0	43	43(100)
A(H1)	0	0	0	0	0	0
A(H1)2009	3431	111 (3.2)	3420	0	261	261 (100)
B	460	0	447	0	NA*	NA*

\* NA – not applicable, as M2 inhibitors do not act against influenza B viruses.  
 Data are from single location (e.g. H275Y only) or multiple location mutation analysis (full sequencing) and/or phenotypic characterisation (IC50 determination). Therefore, data should be interpreted in this context.

**Figure 5: Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2010–20/2011**



### 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 20/2011, one SARI case unrelated to influenza virus was reported by Romania.

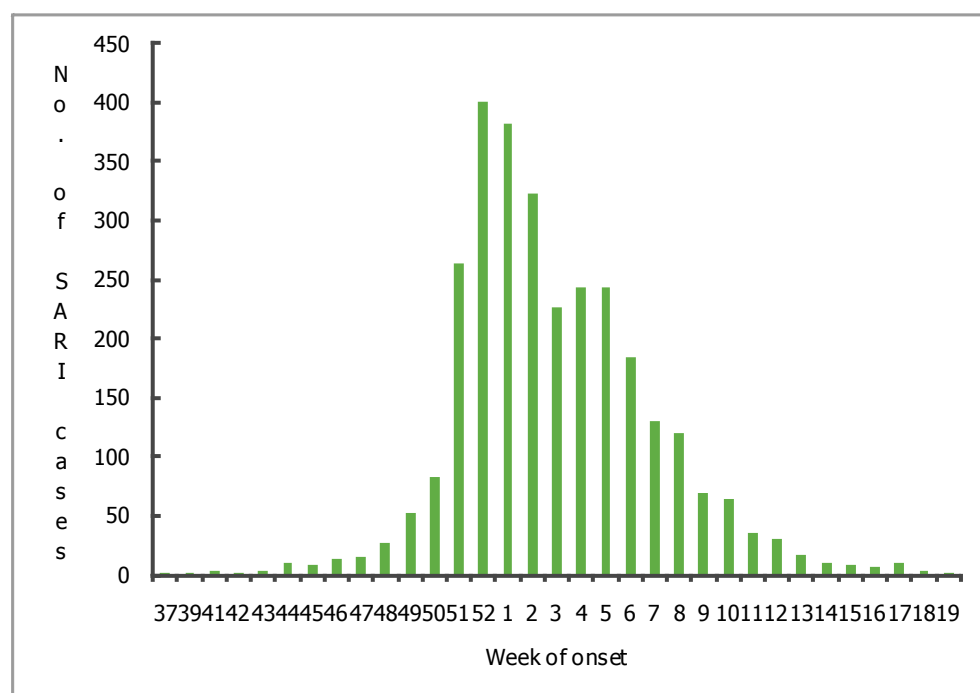
Since week 40/2010, 5 072 SARI cases and 486 related fatalities have been reported by ten countries (Table 4). Of the 3 690 hospitalised cases with confirmed influenza virus infection, 3 374 (91.4%) were type A and 316 (8.6%) were type B. Of the 2 971 sub-typed influenza A viruses, 2 948 (99.2%) were A(H1)2009 and 23 (0.8%) were A(H3) (Table 6). Since week 40/2011, of 2 033 SARI cases admitted to ICU, 1 029 (50.6%) required ventilation (Table 7).

Of 3 642 patients for whom information was available, 1 390 (38.2%) had no prior underlying condition, and obesity, morbid or not, represented the most important underlying condition (Figure 7).

**Table 4: Cumulative number of SARI cases, weeks 40/2010–20/2011**

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	373		12		
Belgium	952				
Finland	89		24		
France	790		144		
Ireland	122		23		
Malta	55	13.3	1	0.24	413609
Portugal	418		45		
Romania	449	7	30	0.47	6413821
Slovakia	212	3.9	21	0.39	5435273
Spain	1612		186		
Total	5072		486		

**Figure 6: Number of SARI cases by week of onset, weeks 40/2010–20/2011**



**Table 5: Number of SARI cases by age and gender, weeks 40/2010–20/2011**

Age groups	Male	Female	Unknown
Under 2	364	263	5
2-17	390	354	7
18-44	647	622	2
45-59	713	516	2
>=60	644	493	3
Unknown	32	14	1
Total	2790	2262	20

**Table 6: Number of SARI cases by influenza type and subtype, week 20/2011**

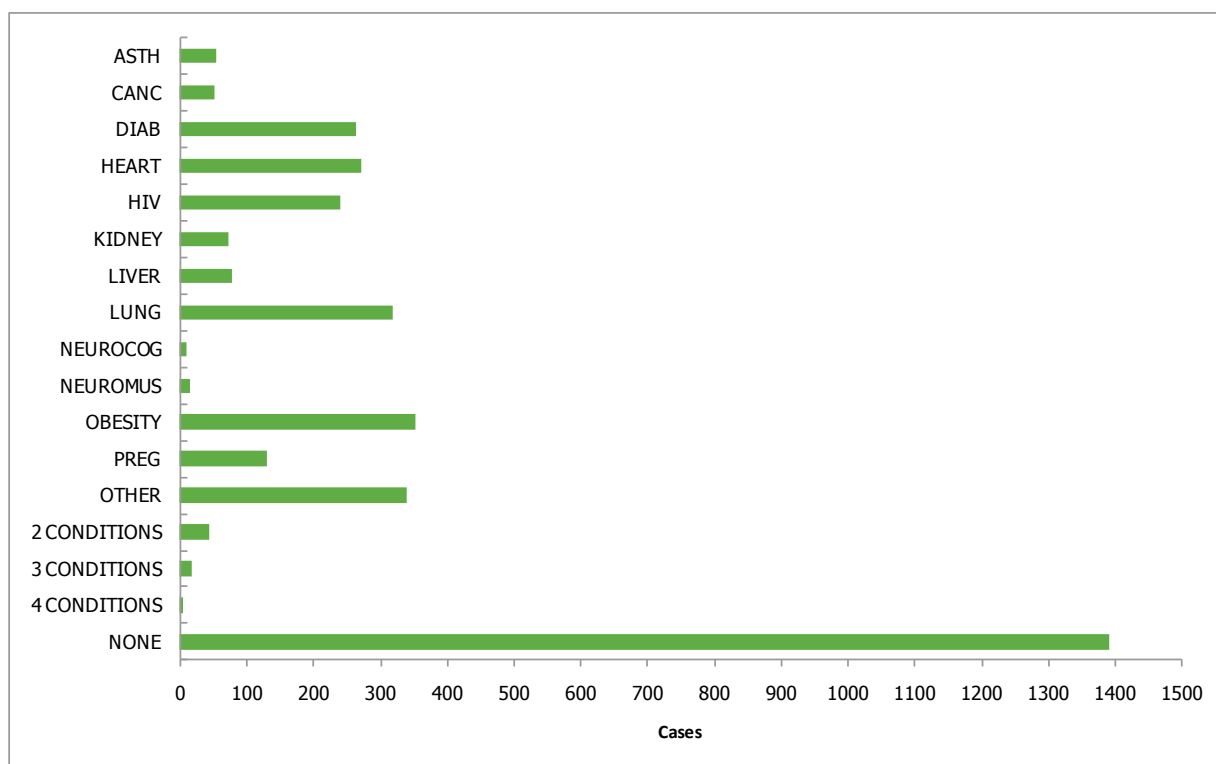
Virus type/subtype	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A		3374
A(H1)2009		2948
A(subtyping not performed)		403
A(H3)		23
Influenza B		316
Other Pathogen		39
Unknown	1	1343
Total	1	5072

**Table 7: Number of SARI cases by level of care and respiratory support, weeks 40/2010–20/2011**

Respiratory support	ICU	Inpatient ward	Other	Unknown
No respiratory support available		1		
No respiratory support necessary	173	471	449	
Oxygen therapy	144	205	395	
Respiratory support given unknown	687	322	879	241
Ventilator	1029	17	6	53

**Table 8: Number of SARI cases by vaccination status, weeks 40/2010–20/2011**

Vaccination Status	Number Of Cases	Percentage of cases
Both, monovalent 2009 pandemic H1N1 and seasonal 2010 vaccination	132	2.6
Monovalent 2009 pandemic H1N1 vaccination	56	1
Not vaccinated	2360	46.5
Seasonal 2010 vaccination	287	6
Unknown	2237	44.1
TOTAL	5072	

**Figure 7: Number of SARI cases by underlying condition, weeks 40/2010–20/2011**

Note: Other represents any other underlying condition than: asthma (ASTH), cancer (CANC), diabetes (DIAB), chronic heart disease (HEART), HIV/other immune deficiency (HIV), kidney-related conditions (KIDNEY), liver-related conditions (LIVER), chronic lung disease (LUNG), neurocognitive disorder (including seizure; NEUROCOG), neuromuscular disorder (NEUROMUS), obesity (BMI between 30 and 40; OBESITY), morbid obesity (BMI above 40; OBESITYMORB) or pregnancy (PREG). NONE is reported if there were no underlying conditions.

**Table 9: Number of underlying conditions in SARI cases by age group, weeks 40/2010–20/2011**

Underlying condition/risk factor	0-11 months	1-4 years	5-14 years	15-24 years	25-64 years	>=65 years
Asthma	2	8	6	5	40	4
Cancer		1	1		39	12
Diabetes		3	4	4	186	91
Chronic heart disease	16	12	4	7	165	98
HIV/other immune deficiency		7	11	15	159	47
Chronic lung disease	12	20	8	10	194	84
No underlying condition	347	320	134	59	440	67
Obesity (BMI between 30 and 40)		1	3	9	236	33
Pregnancy			1	25	107	
Underlying condition unknown	81	166	72	76	803	220
Other (including all other conditions)	36	35	32	16	321	205

**Table 10: Additional clinical complications in SARI cases by age group, weeks 40/2010–20/2011**

Additional clinical complications	0-11 months	1-4 years	5-14 years	15-24 years	25-64 years	>=65 years
Acute respiratory distress syndrome	53	97	53	51	664	139
Bronchiolitis	5	2			3	
Encephalitis		2	2	1	2	
Myocarditis					2	1
None	23	29	23	45	151	43
Other (please specify separately)	3	9	6	2	94	25
Pneumonia (secondary bacterial infection)	48	130	47	63	1055	274
Sepsis/Multi-organ failure	1	1	2		45	9
Unknown	361	306	142	67	767	374

*This report 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, Netherlands) and Thedi Ziegler (National Institute for Health and Welfare, Finland). In addition, the report is reviewed by experts of WHO Regional Office for Europe.*

*Maps and commentary published in this Weekly Influenza Surveillance Overview (WISO) do not represent a statement on the part of ECDC or its partners on the legal or border status of the countries and territories shown.*

*All data published in the WISO are up-to-date on the day of publication. Past this date, however, published data should not be used for longitudinal comparisons as countries tend to retrospectively update their database.*

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