SURVEILLANCE REPORT

Weekly influenza surveillance overview

13 May 2011

Main surveillance developments in week 18/2011 (02– 08 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.

- Based on influenza activity, the 2010/11 season is now drawing to a close in European countries.
- For week 18/2011, all 26 countries reporting influenza intensity experienced low activity.
- During week 18/2011, only three sentinel samples were positive for influenza virus.
- Two countries reported a total of 11 hospitalised cases with a severe acute respiratory infection, four of which tested positive for influenza virus infection.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Low influenza activity was reported by 26 countries. All countries reported decreasing or unchanging trends. For more information, **click here**.

Virological surveillance: In week 18/2011, 23 influenza viruses were detected in sentinel and non-sentinel specimens, 13 (57%) were type A and 10 (43%) were type B. For more information, **click here**.

Hospital surveillance of severe acute respiratory infection (SARI): Two countries reported a total of 11 hospitalised cases with a severe acute respiratory infection, four of which tested positive for influenza virus infection. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

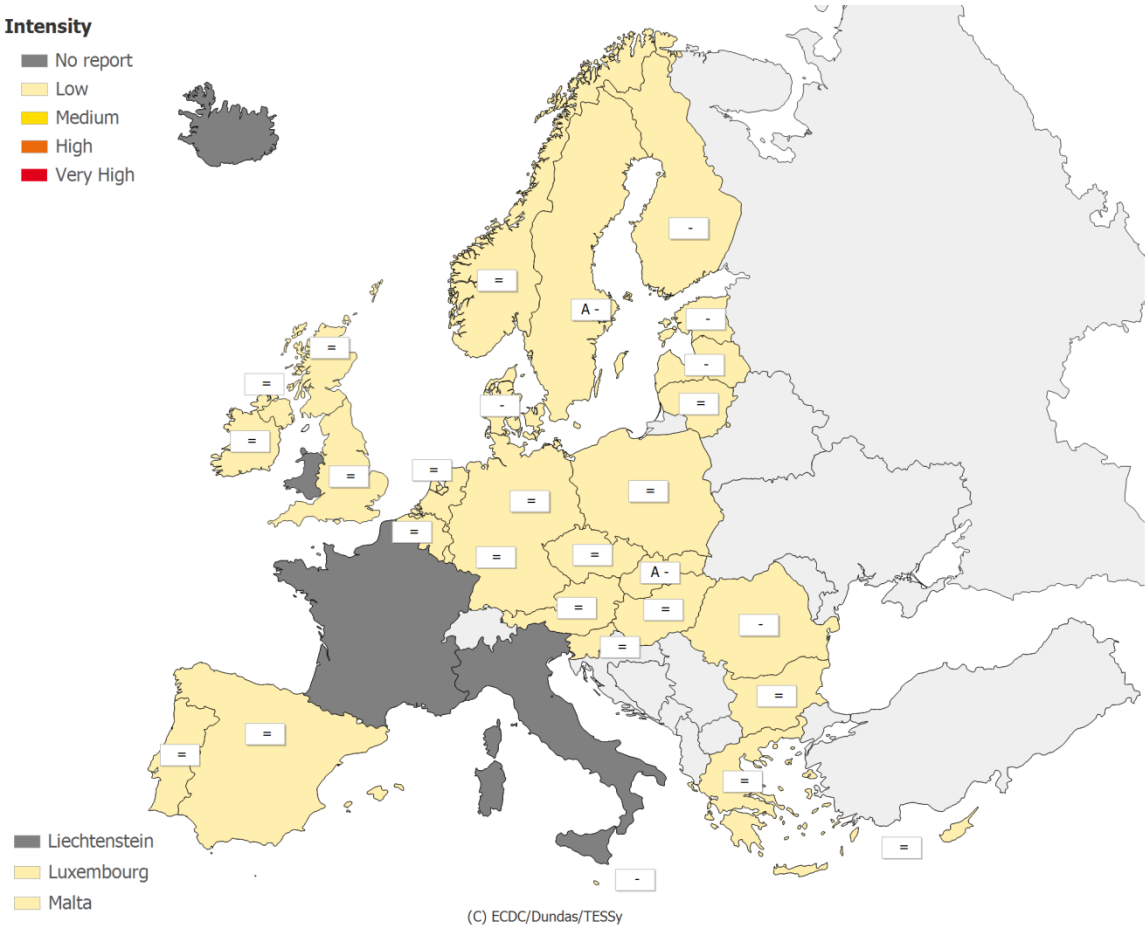
Weekly analysis – epidemiology

During week 18/2011, all 26 countries reporting intensity data experienced low influenza activity (Table 1, Map 1).

For the geographical spread indicator, 26 countries reported (Table 1, Map 2). Sporadic activity was reported by Cyprus, Estonia, Finland, Germany, Latvia, Lithuania, Malta, Netherlands, Poland, Romania, Sweden and the UK (England). Fourteen countries, and the UK (Northern Ireland and Scotland) reported no activity.

All the reporting countries reported decreasing or unchanging trends (Table 1, Map 2).

Map 1: Intensity for week 18/2011

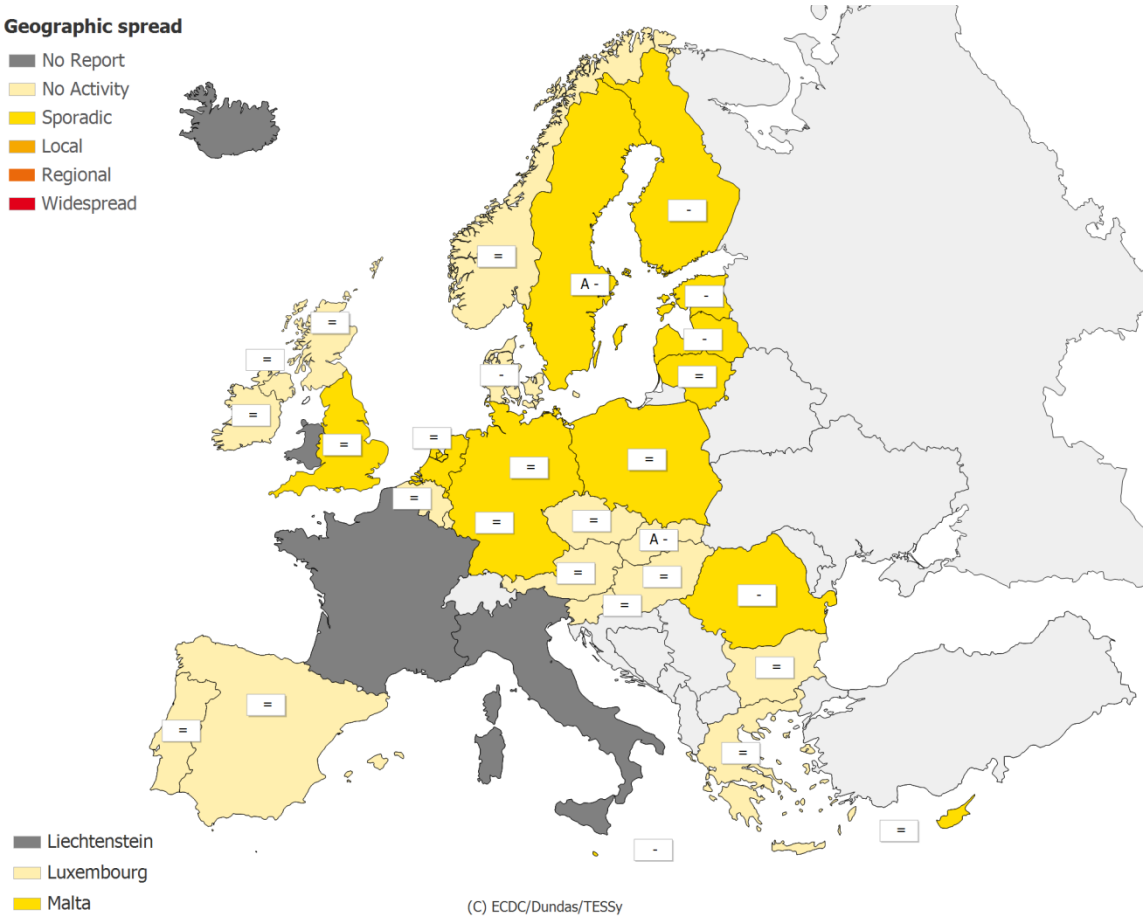


* A type/subtype is reported as dominant when > 40 % of all samples are positive for the type/subtype.

Legend:

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

Map 2: Geographic spread for week 18/2011



* 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 report	Activity level was not reported
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)

+	Increasing clinical activity
-	Decreasing clinical activity
=	Stable clinical activity
A	Type A

Table 1: Epidemiological and virological overview by country, week 18/2011

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	Stable	1	None	0.0	-	-	Graphs	Graphs
Belgium	Low	No activity	Stable	5	None	0.0	24.4	975.8	Graphs	Graphs
Bulgaria	Low	No activity	Stable	-	None	0.0	-	420.9	Graphs	Graphs
Cyprus	Low	Sporadic	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic	Low	No activity	Stable	-	-	0.0	14.1	670.4	Graphs	Graphs
Denmark	Low	No activity	Decreasing	4	None	0.0	14.6	-	Graphs	Graphs
Estonia	Low	Sporadic	Decreasing	4	None	0.0	4.5	218.9	Graphs	Graphs
Finland	Low	Sporadic	Decreasing	8	None	0.0	-	-	Graphs	Graphs
France				-	-	0.0	-	-		
Germany	Low	Sporadic	Stable	3	None	0.0	-	515.4	Graphs	Graphs
Greece	Low	No activity	Stable	1	-	100.0	42.3	-	Graphs	Graphs
Hungary	Low	No activity	Stable	2	None	0.0	23.5	-	Graphs	Graphs
Iceland				0	-	0.0	-	-	Graphs	Graphs
Ireland	Low	No activity	Stable	1	None	0.0	1.7	-	Graphs	Graphs
Italy				-	-	0.0	-	-		
Latvia	Low	Sporadic	Decreasing	0	None	0.0	-*	-*	Graphs	Graphs
Lithuania	Low	Sporadic	Stable	-	-	0.0	0.4	293.4	Graphs	Graphs
Luxembourg	Low	No activity	Stable	1	None	0.0	-*	-*	Graphs	Graphs
Malta	Low	Sporadic	Decreasing	-	-	0.0	-*	-*	Graphs	Graphs
Netherlands	Low	Sporadic	Stable	3	None	0.0	11.7	-	Graphs	Graphs
Norway	Low	No activity	Stable	0	None	0.0	18.3	-	Graphs	Graphs
Poland	Low	Sporadic	Stable	2	None	0.0	13.7	-	Graphs	Graphs
Portugal	Low	No activity	Stable	0	None	0.0	0.0	-	Graphs	Graphs
Romania	Low	Sporadic	Decreasing	4	None	25.0	0.8	611.1	Graphs	Graphs
Slovakia	Low	No activity	Decreasing	0	A	0.0	108.3	1177.6	Graphs	Graphs
Slovenia	Low	No activity	Stable	0	None	0.0	0.0	477.2	Graphs	Graphs
Spain	Low	No activity	Stable	16	None	0.0	4.6	-	Graphs	Graphs
Sweden	Low	Sporadic	Decreasing	3	A	0.0	0.8	-	Graphs	Graphs
UK - England	Low	Sporadic	Stable	9	None	11.1	3.2	277.8	Graphs	Graphs
UK - Northern Ireland	Low	No activity	Stable	0	-	0.0	8.4	243.3	Graphs	Graphs
UK - Scotland	Low	No activity	Stable	2	None	0.0	0.0	90.4	Graphs	Graphs
UK - Wales				-	-	0.0	-	-		
Europe				69		4.3				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 18/2011, 23 countries reported virological data. Sentinel physicians collected 69 specimens, of which only three (4.3%) tested positive for influenza virus.

Of the 23 influenza viruses detected during week 18/2011 in sentinel and non-sentinel specimens, 13 (57%) were type A and 10 (43%) were type B. Due to the low number of influenza virus detections, only Slovakia and Sweden reported a dominant type, which was type A for both (Table 1).

Since week 40/2010, of 56 912 influenza detections in sentinel and non-sentinel specimens, 37 809 (66.4%) have been influenza A and 19 103 (33.6%) influenza B viruses. Of 27 234 influenza A viruses sub-typed, 26 535 (97.4%) were A(H1)2009, and 699 (2.6%) were A(H3) viruses (Table 2). Trends in virological detections since week 40/2010 are shown in Figures 1 to 3.

Since week 40/2010, 4 516 influenza viruses from sentinel and non-sentinel specimens have been characterised antigenically (Figure 4): 2 254 as A/California/7/2009 (H1N1)-like; 1 935 as B/Brisbane/60/2008-like (Victoria lineage); 176 as B/Florida/4/2006-like (Yamagata lineage); 145 as A/Perth/16/2009 (H3N2)-like; and six as B/Bangladesh/3333/2007-like (Yamagata lineage).

Since week 40/2010, Denmark, Germany, Ireland, Italy, the Netherlands, Norway, Spain and the UK have reported antiviral resistance data to TESSy (Table 3). Ninety-three (3.0%) of 3 054 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. Sixteen of 65 resistant viruses, in patients with known exposure to antivirals, 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 circulating viruses can be found in the March report prepared by the Community Network of Reference Laboratories (CNRL) coordination team.

In week 18/2011, respiratory syncytial virus detections continued to decline in the 11 countries reporting (Figure 5).

Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2010–18/2011

	Current Period		Season	
Virus type/subtype	Sentinel	Non-sentinel	Sentinel	Non-sentinel
Influenza A	0	13	8362	29447
A(H1)2009	0	1	7444	19091
A (subtyping not performed)	0	12	693	9882
A (not subtypable)	0	0	0	0
A (H3)	0	0	225	474
A (H1)	0	0	0	0
Influenza B	3	7	5548	13555
Total Influenza	**3**	**20**	**13910**	**43002**

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 40/2010–18/2011

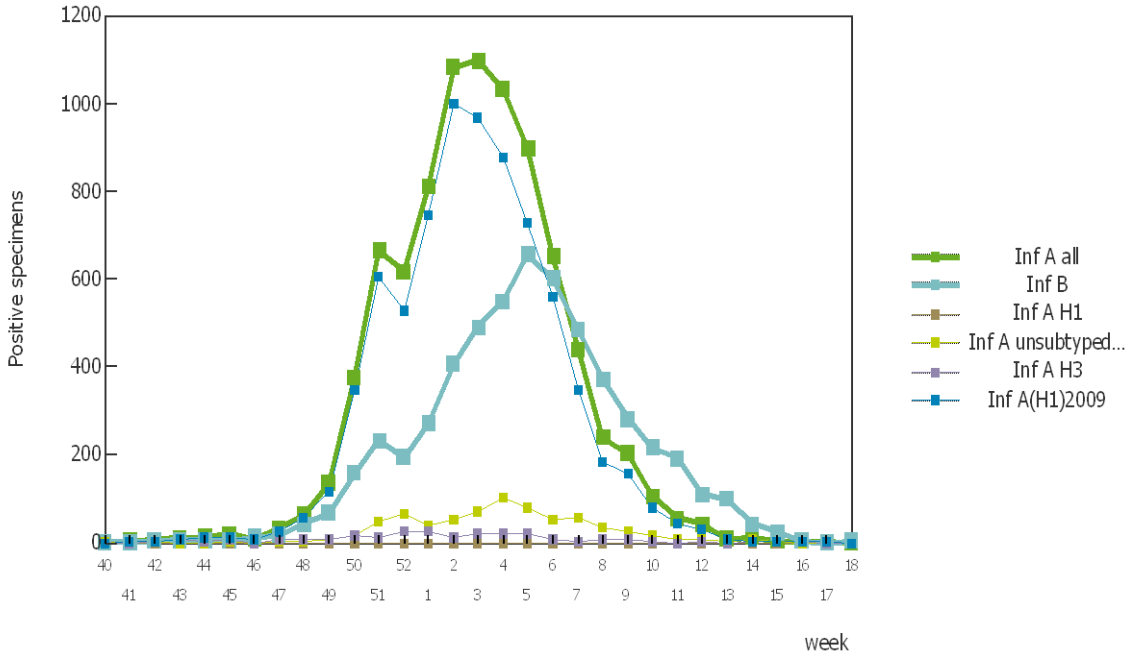


Figure 2: Number of non-sentinel specimens positive for influenza by type, subtype and week of report, weeks 40/2010–18/2011

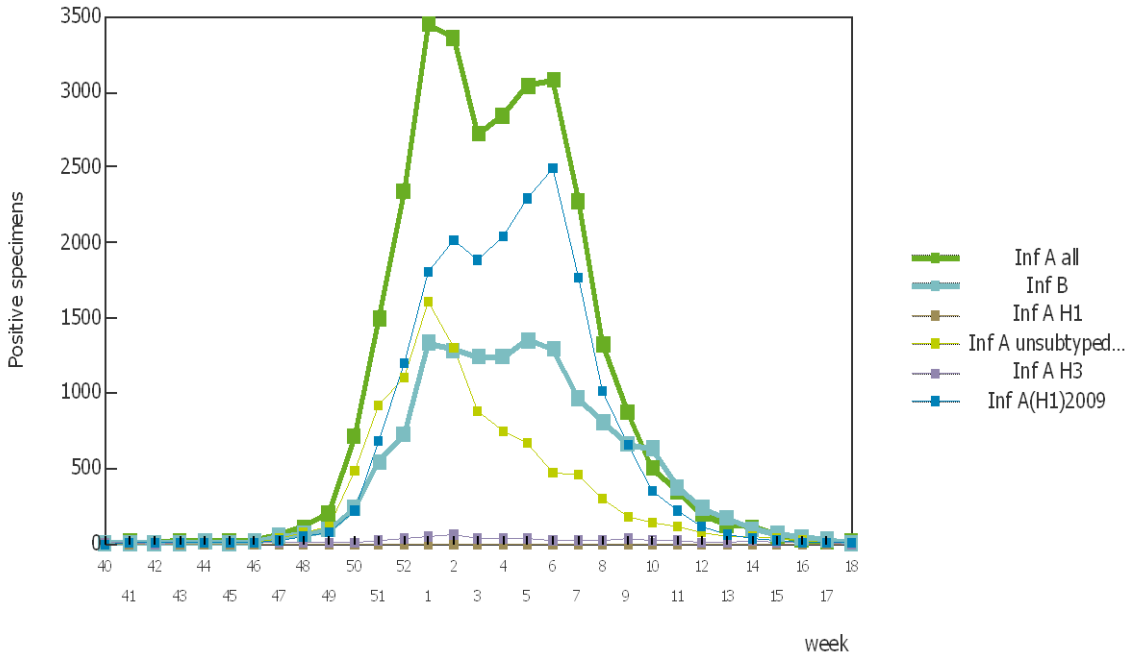


Figure 3: Proportion of sentinel samples positive for influenza, weeks 40/2010–18/2011

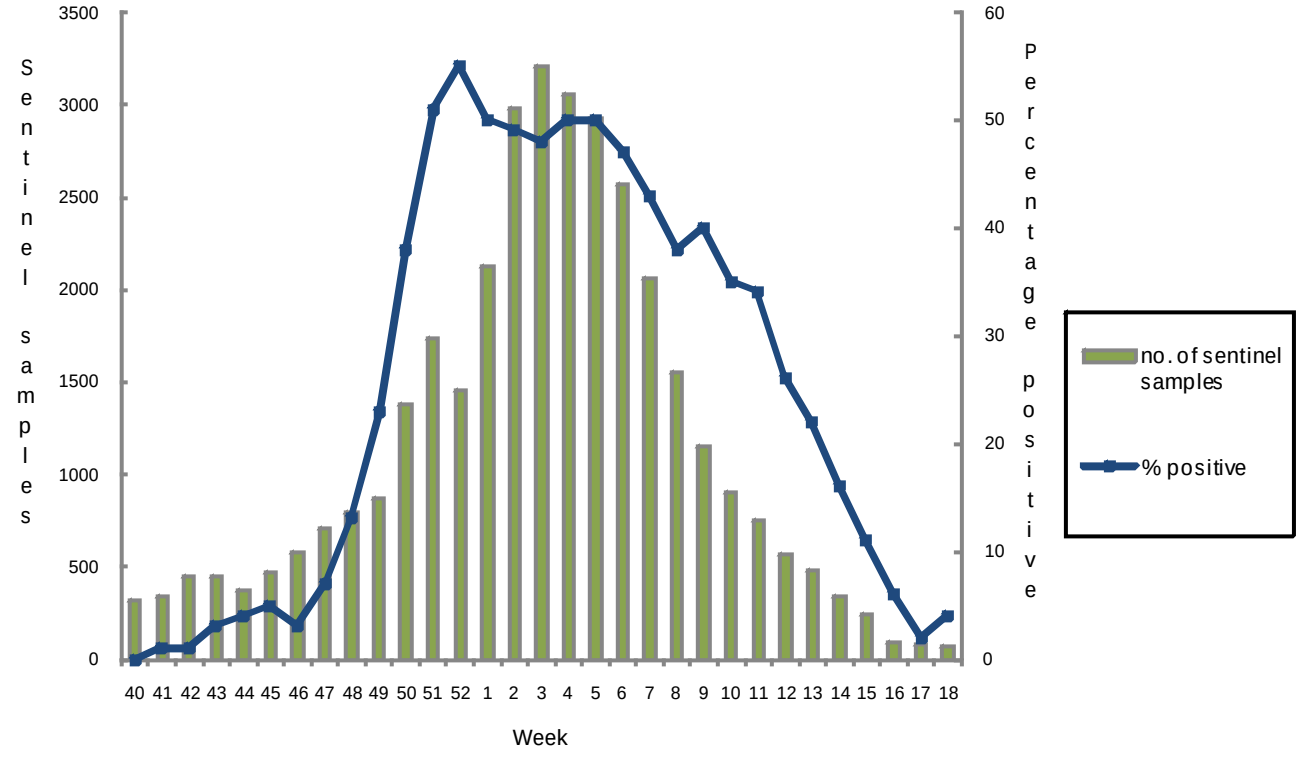


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2010–18/2011

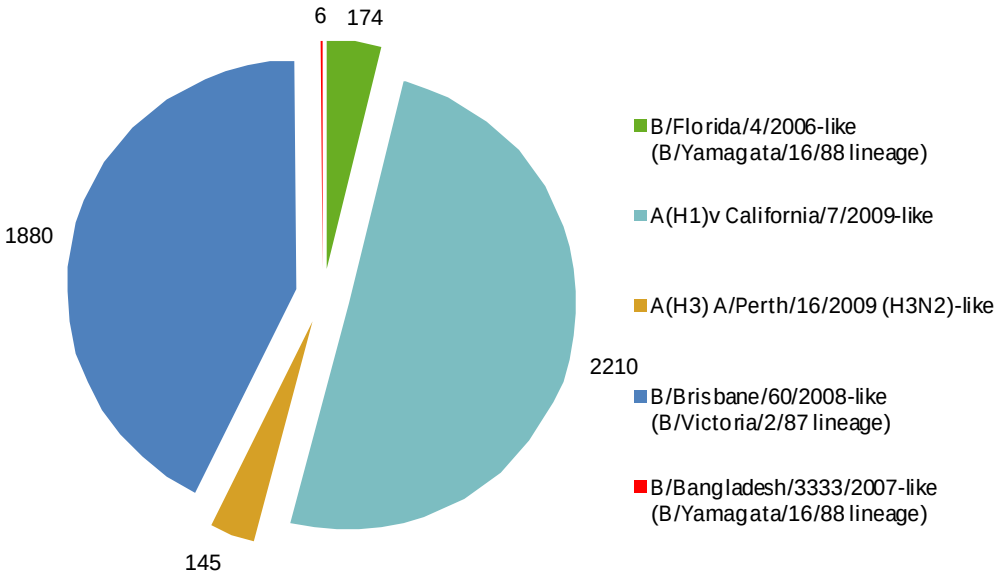
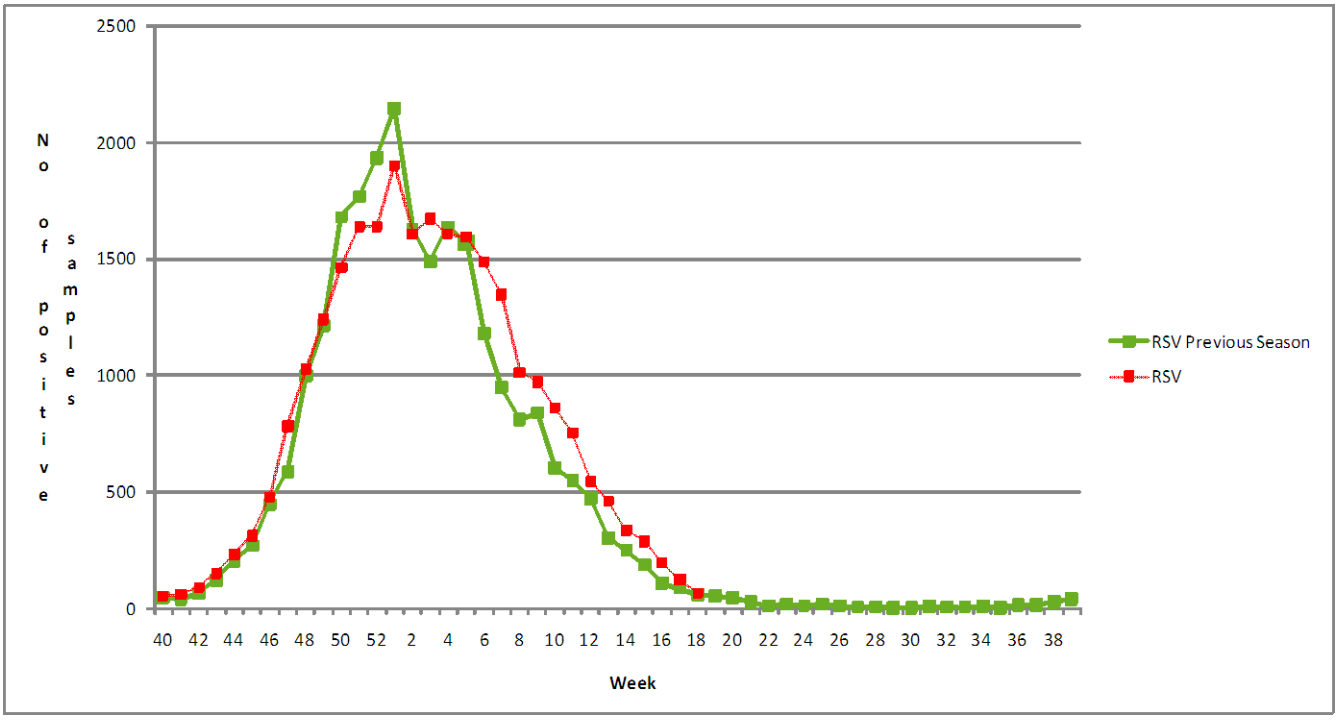


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2010–18/2011

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)	18	0	18	0	10	10(100)
A(H1)	0	0	0	0	0	0
A(H1)2009	3054	93 (3.0)	305	0	197	197 (100)
B	346	0	340	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 40/2010–18/2011



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 18/2011, Romania and Slovakia reported 11 SARI cases, four of them with confirmed influenza virus infection. Since week 40/2010, 5 019 SARI cases have been reported by 10 countries (Table 4).

Of the 3 645 hospitalised cases with confirmed influenza virus infection reported since week 40/2010, 3 332 (91.4%) were type A and 313 (8.6%) type B. Of 2 937 sub-typed influenza type A viruses, 2 914 (99.2%) were A(H1)2009 and 23 (0.8%) were A(H3) (Table 6).

Since week 40/2010, 1 017 SARI cases have been admitted to ICU, of which at least 1 029 (51.0%) needed ventilation (Table 7).

Of 3 606 patients for whom information was available, 38.4% had no prior underlying condition, and obesity, morbid or not, was the most common underlying condition (Figure 7).

Table 4: Cumulative number of SARI cases, weeks 40/2010–18/2011

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
Romania	446	6.95	30	0.47	6413821
Portugal	418		45		
Finland	81		16		
Belgium	948				
Spain	1575		186		
Malta	55	13.3	1	0.24	413609
Slovakia	211	3.88	21	0.39	5435273
Austria	373		12		
France	790		144		
Ireland	122		23		
Total	5019		478		

Figure 6: Number of SARI cases by week of onset, weeks 40/2010 - 18/2011

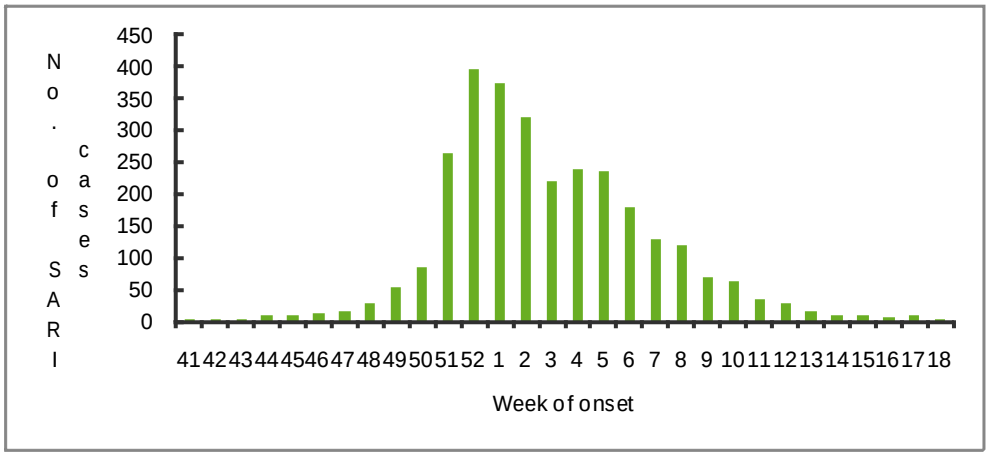


Table 5: Number of SARI cases by age and gender, weeks 40/2010–18/2011

Age groups	Male	Female	Unknown
Under 2	361	263	5
2-17	388	350	7
18-44	639	613	2
45-59	702	511	2
>=60	637	489	3
Unknown	32	14	1
Total	2759	2240	20

Table 6: Number of SARI cases by influenza type and subtype, week 18/2011 and cumulative for the season

Virus type/subtype	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	2	3332
A(H1)2009	2	2914
A(subtyping not performed)		395
A(H3)		23
Influenza B	2	313
Other Pathogen		39
Unknown	7	1335
Total	11	5019

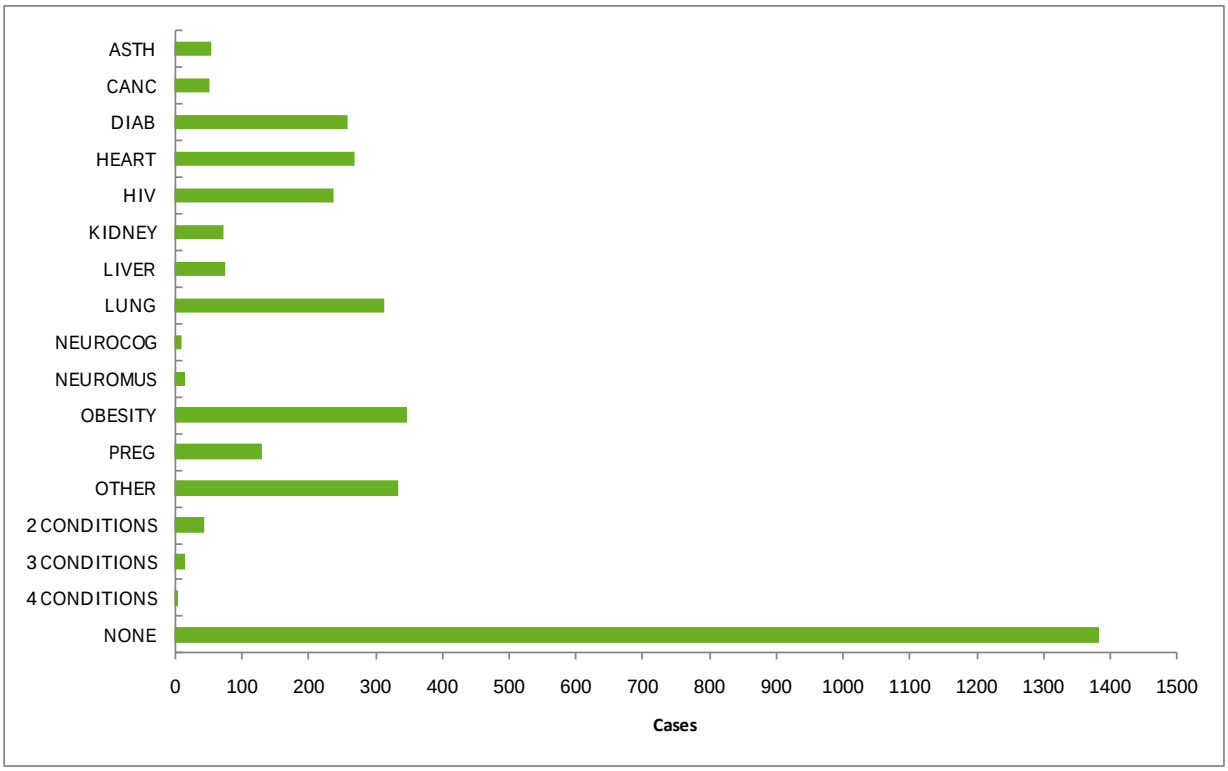
Table 7: Number of SARI cases by level of care and respiratory support, weeks 40/2010–18/2011

Respiratory support	ICU	Inpatient ward	Other	Unknown
No respiratory support available		1		
No respiratory support necessary	173	470	447	
Oxygen therapy	144	204	392	
Respiratory support given unknown	671	321	858	236
Ventilator	1029	17	6	50

Table 8: Number of SARI cases by vaccination status, weeks 40/2010–18/2011

Vaccination Status	Number Of Cases	Percentage of cases
Both, monovalent 2009 pandemic H1N1 and seasonal 2010 vaccination	127	2.5
Monovalent 2009 pandemic H1N1 vaccination	52	1
Not vaccinated	2335	46.5
Seasonal 2010 vaccination	281	6
Unknown	2224	44.3
TOTAL	5019	

Figure 7: Number of SARI cases by underlying condition, weeks 40/2010–18/2011



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 40/2010–18/2011

Underlying condition/risk factor	0-11 months	1-4 years	5-14 years	15-24 years	25-64 years	>=65 years
Asthma	2	9	5	5	40	4
Cancer		1	1		39	12
Diabetes		3	4	3	183	91
Chronic heart disease	16	12	4	7	163	96
HIV/other immune deficiency		7	11	15	156	47
Chronic lung disease	12	20	8	9	190	82
No underlying condition	345	317	133	59	440	67
Obesity (BMI between 30 and 40)		1	3	9	236	33
Pregnancy			1	25	106	
Underlying condition unknown	81	166	71	75	790	218
Other (including all other conditions)	36	34	32	15	313	202

Table 10: Additional clinical complications in SARI cases by age group, weeks 40/2010–18/2011

Additional clinical complications	0-11 months	1-4 years	5-14 years	15-24 years	25-64 years	>=65 years
Acute respiratory distress syndrome	52	98	52	51	661	138
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	128	46	61	1026	265
Sepsis/Multi-organ failure	1	1	2		45	9
Unknown	360	304	141	65	765	374

Description of the system

A number of Member States carry out hospital-based surveillance of severe acute respiratory infection (SARI) exhaustively or at selected sentinel sites. SARI surveillance serves to monitor the trends in the severity of influenza and potential risk factors for severe disease to help guide preventive measures and health care resource allocation.

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.