

SURVEILLANCE REPORT

Weekly influenza surveillance overview

21 April 2011

Main surveillance developments in week 15/2011 (11 Apr 2011 – 17 Apr 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 epidemics of the 2010–11 season are now drawing to a close in European countries.
- All 22 countries reporting influenza intensity have been experiencing low activity. 23 countries reported decreasing or unchanging trends.
- Of the 24 influenza viruses detected in sentinel specimens, 23 (95.8%) have been influenza B viruses and one (4.2%) has been influenza A virus (week 15/2011). For more than a month, influenza B viruses have been detected more frequently than influenza A viruses.
- Three countries reported a total of 10 hospitalised severe acute respiratory infections, of which one was due to influenza infection.

Sentinel surveillance of influenza-like illness (ILI)/acute respiratory infection (ARI): Low influenza activity was reported by 22 countries. Stable or decreasing trends were reported by 23 countries. For more information, [click here](#).

Virological surveillance: In week 15/2011, 125 influenza viruses were detected in sentinel and non-sentinel specimens: 50 (40%) were type A, and 75 (60%) were type B. The latter virus type was reported as dominant or co-dominant with A(H1N1)2009 virus in six countries. For more information, [click here](#).

Hospital surveillance of severe acute respiratory infection (SARI): Three countries reported a total of 10 hospitalised severe acute respiratory infections, of which one was due to influenza infection. For more information, [click here](#).

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

During week 15/2011, 22 countries reported intensity data, with all countries reporting low influenza activity.

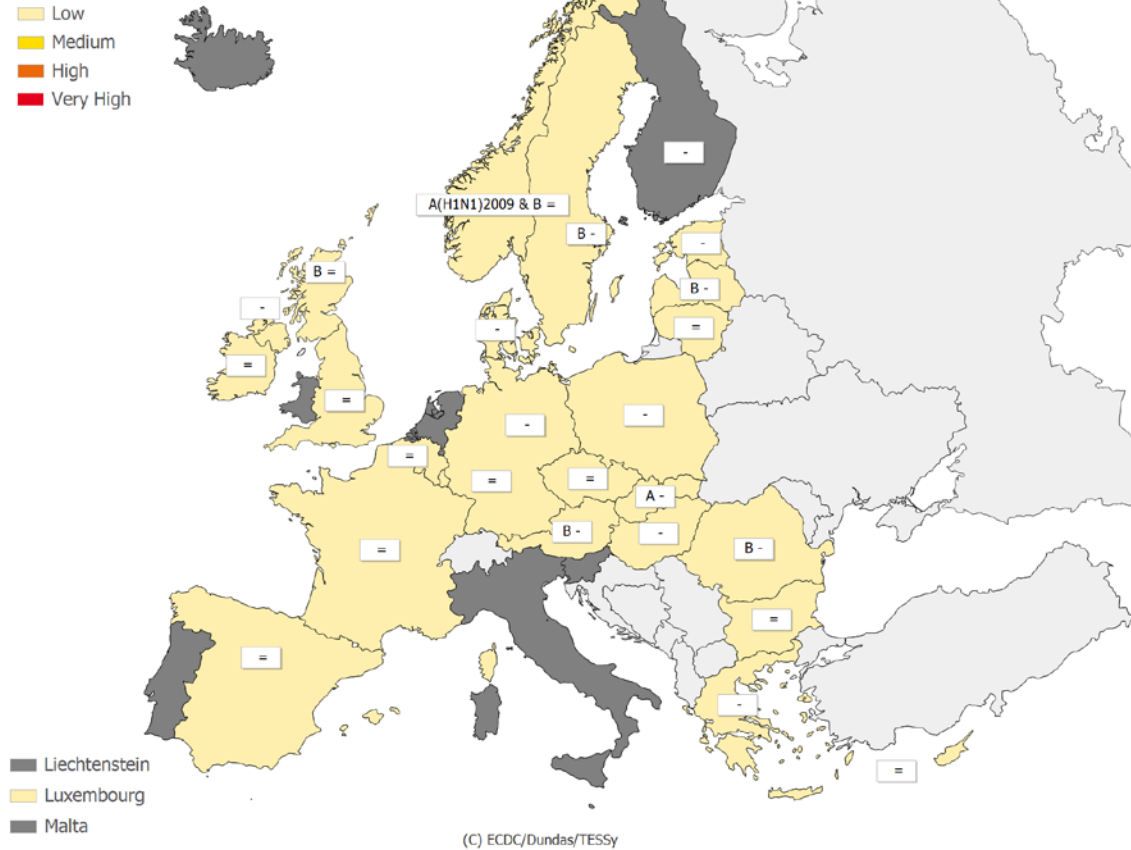
23 countries reported data for the geographical spread indicator. Regional activity was reported by Lithuania, and sporadic activity was reported by 19 countries, including the UK (England and Scotland only). Three countries (Denmark, Ireland and Luxembourg) reported no activity – as did the UK (Northern Ireland).

Decreasing or stable trends were reported by 23 countries (Table 1, Map 2).

Map 1: Intensity for week 15/2011

Intensity

- No report
- Low
- Medium
- High
- Very High

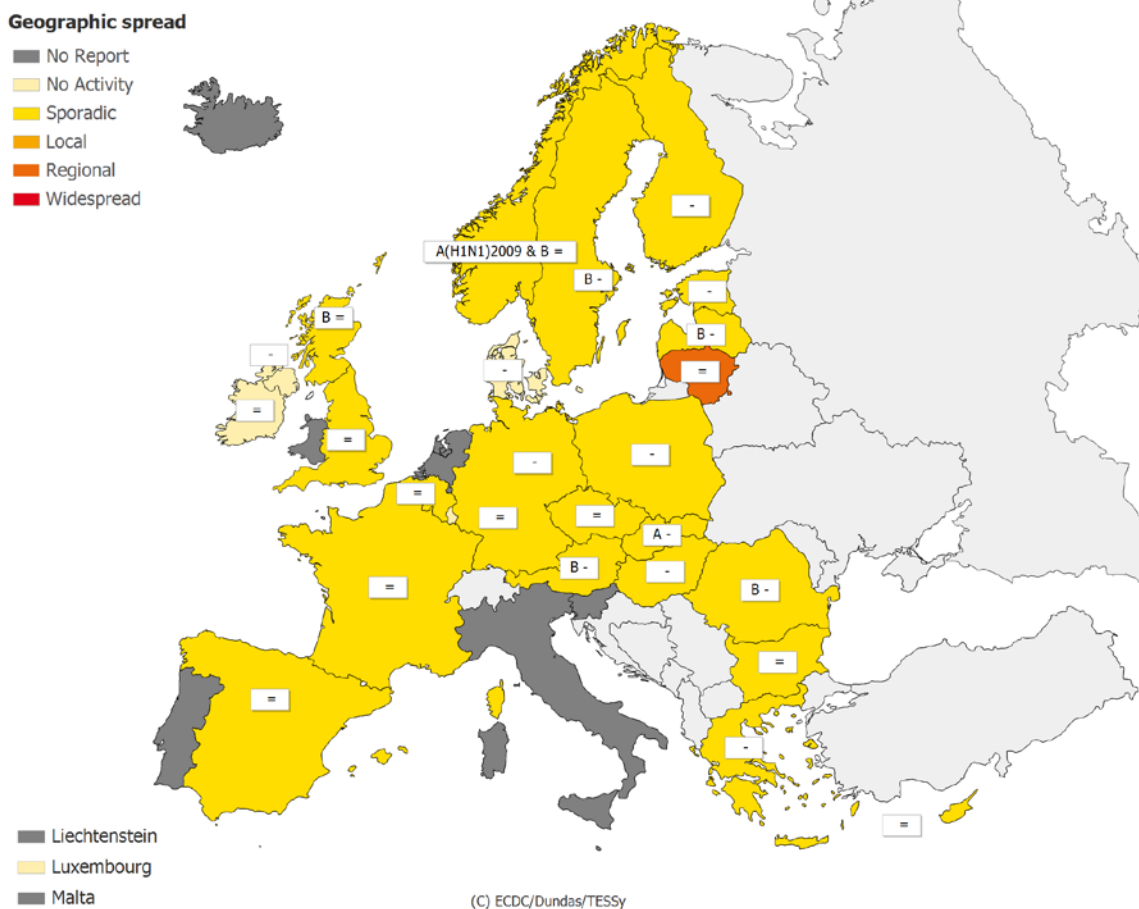


* A type/subtype is reported as dominant when > 40 % of all samples are positive for the type/subtype.

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	A(H1N1) 2009 & B	Type B and Type A, Subtype (H1N1)2009
		B	Type B

Map 2: Geographic spread for week 15/2011



(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:

No report	Activity level was not reported	+	Increasing clinical activity
No activity	No evidence of influenza virus activity (clinical activity remains at baseline levels)	-	Decreasing clinical activity
Sporadic	Isolated cases of laboratory confirmed influenza infection	=	Stable clinical activity
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)	A	Type A
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)	A(H1N1) 2009 & B	Type B and Type A, Subtype (H1N1)2009
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)	B	Type B

Table 1: Epidemiological and virological overview by country, week 15/2011

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	Sporadic	Decreasing	2	B	100.0	-	-	Graphs	Graphs
Belgium	Low	Sporadic	Stable	7	None	14.3	17.5	1294.4	Graphs	Graphs
Bulgaria	Low	Sporadic	Stable	-	None	0.0	-	468.4	Graphs	Graphs
Cyprus	Low	Sporadic	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic	Low	Sporadic	Stable	-	-	0.0	27.5	787.4	Graphs	Graphs
Denmark	Low	No activity	Decreasing	3	None	0.0	20.8	-	Graphs	Graphs
Estonia	Low	Sporadic	Decreasing	15	None	20.0	7.7	310.0	Graphs	Graphs
Finland	Unknown (no information available)	Sporadic	Decreasing	27	None	11.1	-	-	Graphs	Graphs
France	Low	Sporadic	Stable	15	None	0.0	-	1244.2	Graphs	Graphs
Germany	Low	Sporadic	Decreasing	22	None	18.2	-	735.0	Graphs	Graphs
Greece	Low	Sporadic	Decreasing	0	None	0.0	40.9	-	Graphs	Graphs
Hungary	Low	Sporadic	Decreasing	17	None	29.4	40.2	-	Graphs	Graphs
Iceland				-	-	0.0	-	-		
Ireland	Low	No activity	Stable	4	None	0.0	3.7	-	Graphs	Graphs
Italy				9	-	0.0	-	-	Graphs	Graphs
Latvia	Low	Sporadic	Decreasing	0	B	0.0	-*	-*	Graphs	Graphs
Lithuania	Low	Regional	Stable	0	None	0.0	3.6	392.2	Graphs	Graphs
Luxembourg	Low	No activity	Stable	2	None	0.0	-*	-*	Graphs	Graphs
Malta				-	-	0.0	-	-		
Netherlands				4	None	0.0	-	-	Graphs	Graphs
Norway	Low	Sporadic	Stable	1	A(H1N1) 2009 & B	0.0	30.8	-	Graphs	Graphs
Poland	Low	Sporadic	Decreasing	7	None	14.3	43.3	-	Graphs	Graphs
Portugal				-	-	0.0	-	-		
Romania	Low	Sporadic	Decreasing	10	B	20.0	4.6	731.5	Graphs	Graphs
Slovakia	Low	Sporadic	Decreasing	1	A	100.0	145.6	1414.6	Graphs	Graphs
Slovenia				1	None	0.0	-	-	Graphs	Graphs
Spain	Low	Sporadic	Stable	38	None	2.6	9.1	-	Graphs	Graphs
Sweden	Low	Sporadic	Decreasing	6	B	0.0	3.8	-	Graphs	Graphs
UK - England	Low	Sporadic	Stable	12	None	0.0	5.2	381.6	Graphs	Graphs
UK - Northern Ireland	Low	No activity	Decreasing	0	-	0.0	7.4	388.5	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	10	B	10.0	1.2	207.5	Graphs	Graphs
UK - Wales				-	-	0.0	-	-		
Europe				213		11.3				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 15/2011, 24 countries reported virological data. Sentinel physicians collected 213 specimens, of which 24 (11.3%) tested positive for influenza.

For the fifth consecutive week, influenza B virus detections were higher than those for influenza A viruses. Of the 125 influenza viruses detected during week 15/2011 in sentinel and non-sentinel specimens, 50 (40%) were type A and 75 (60%) were type B. Influenza B virus was reported as dominant or co-dominant with A(H1N1)2009 virus in six countries.

Since week 40/2010, of 56 728 influenza detections in sentinel and non-sentinel specimens, 37 718 (66.5%) have been influenza A and 19 010 (33.5%) influenza B viruses. Of 27 198 influenza A viruses sub-typed, 26 507 (97.5%) were A(H1N1)2009, and 691 (2.5%) 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, 3995 influenza viruses from sentinel and non-sentinel specimens have been characterised antigenically (Figure 4): 2041 as A/California/7/2009 (H1N1)-like; 1659 as B/Brisbane/60/2008-like (Victoria lineage); 153 as B/Florida/4/2006-like (Yamagata lineage); 140 as A/Perth/16/2009 (H3N2)-like; and two 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-two of 3201 (2.9%) influenza A(H1)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, from patients for whom exposure to antivirals was known, 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 15/2011, respiratory syncytial virus detections continued to decline in 11 reporting countries (Figure 5).

Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2010–15/2011

Virus type/subtype	Current Period		Season	
	Sentinel	Non-sentinel	Sentinel	Non-sentinel
Influenza A	1	49	8350	29368
A(H1)2009	1	17	7439	19068
A (subtyping not performed)	0	25	691	9829
A (not subtypable)	0	0	0	0
A (H3)	0	7	220	471
A (H1)	0	0	0	0
Influenza B	23	52	5534	13476
Total Influenza	24	101	13884	42844

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 40/2010–15/2011

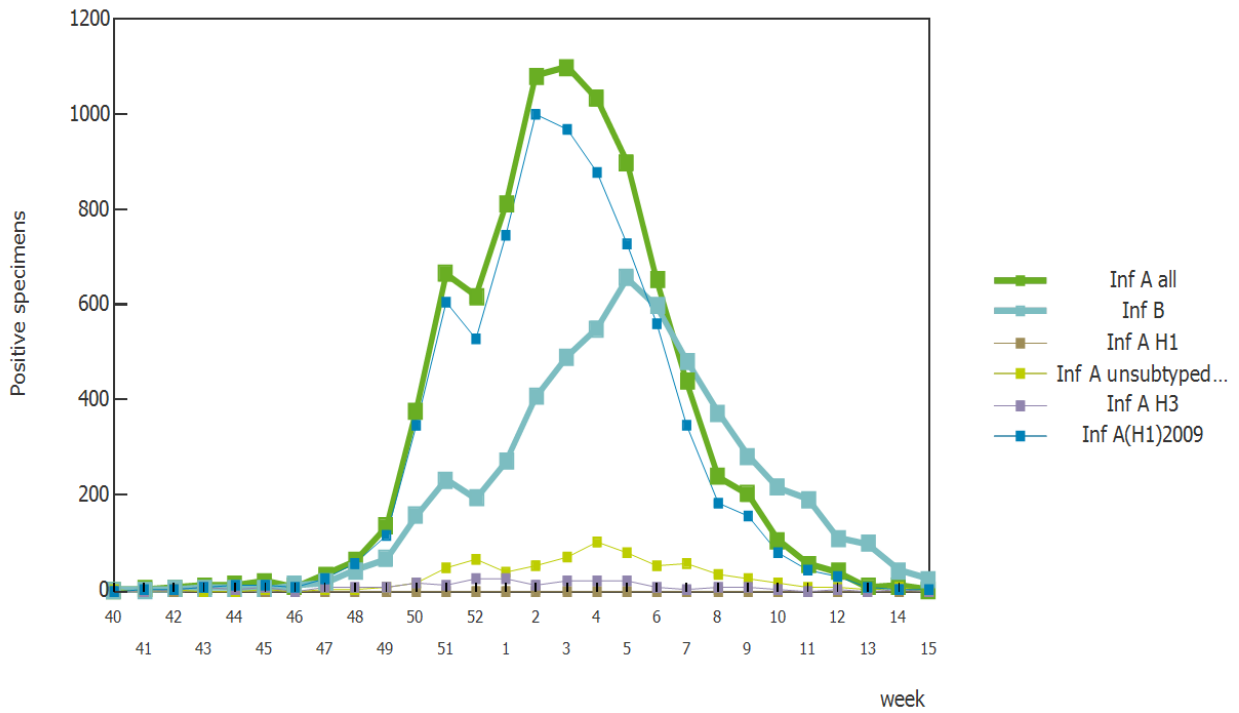


Figure 2: Number of non-sentinel specimens positive for influenza by type, subtype and week of report, weeks 40/2010–15/2011

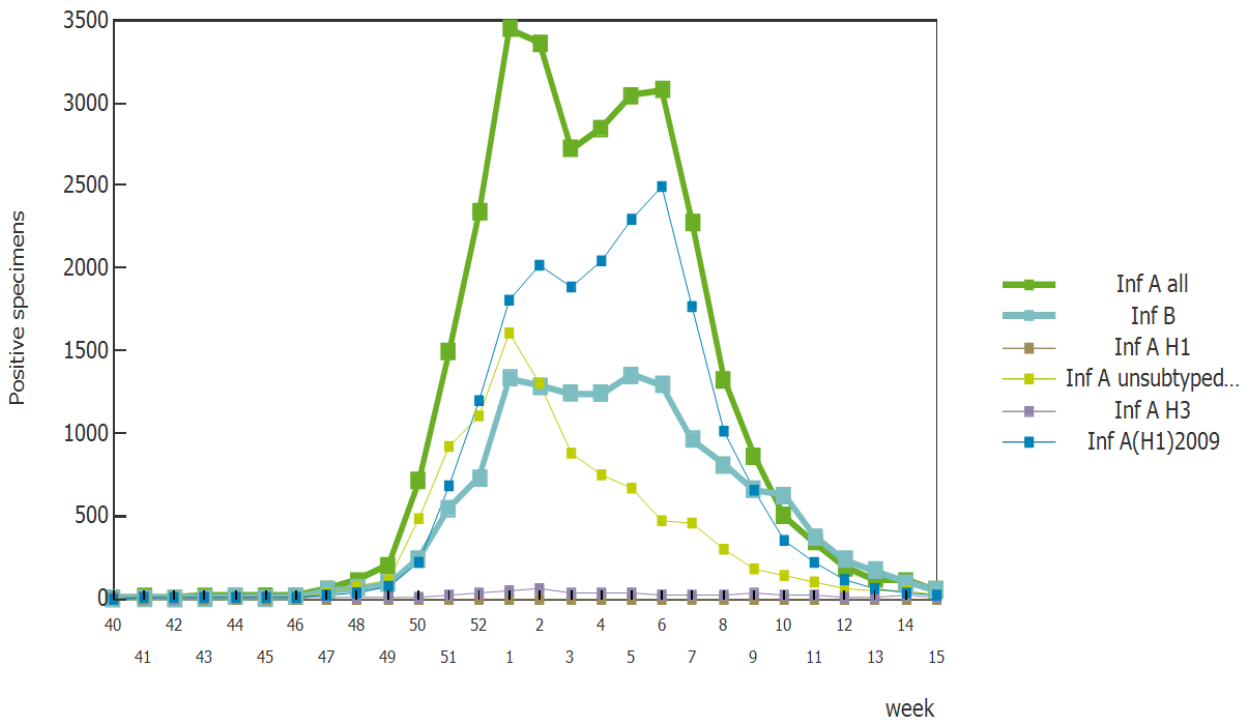


Figure 3: Proportion of sentinel samples positive for influenza, weeks 40/2010–15/2011

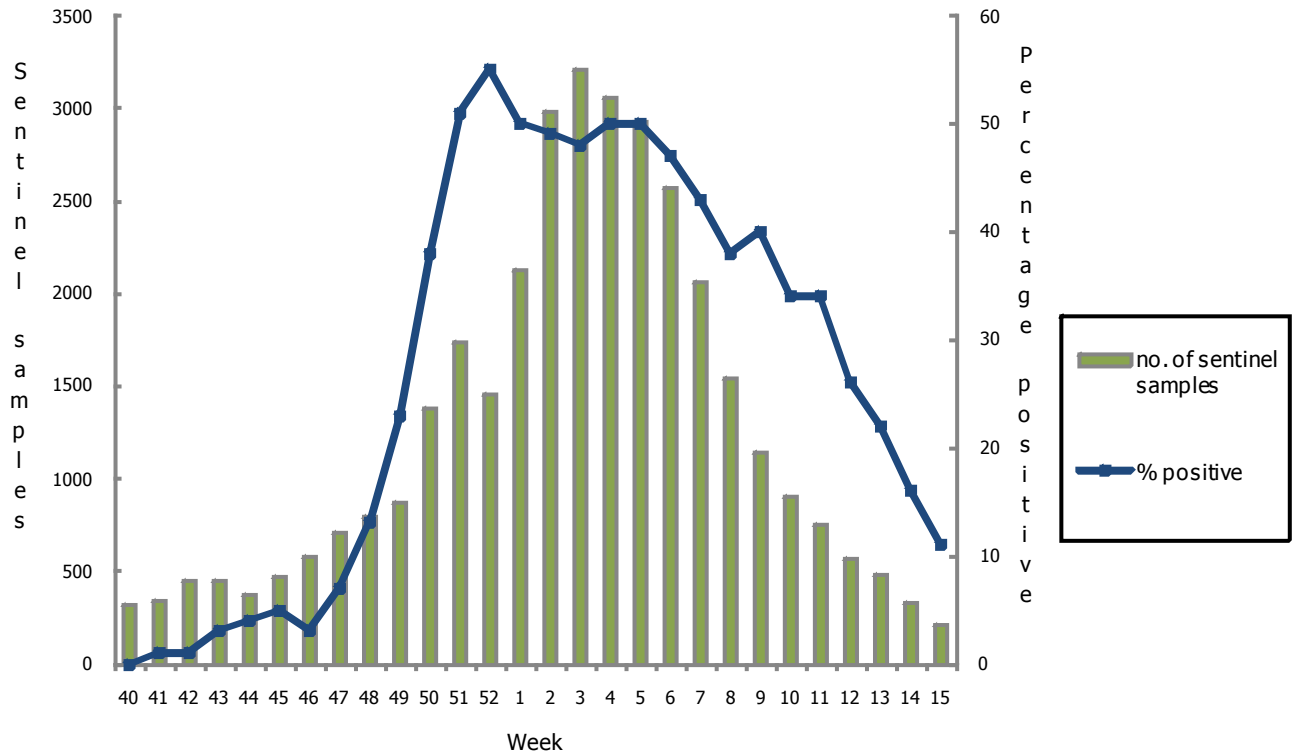


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2010–15/2011

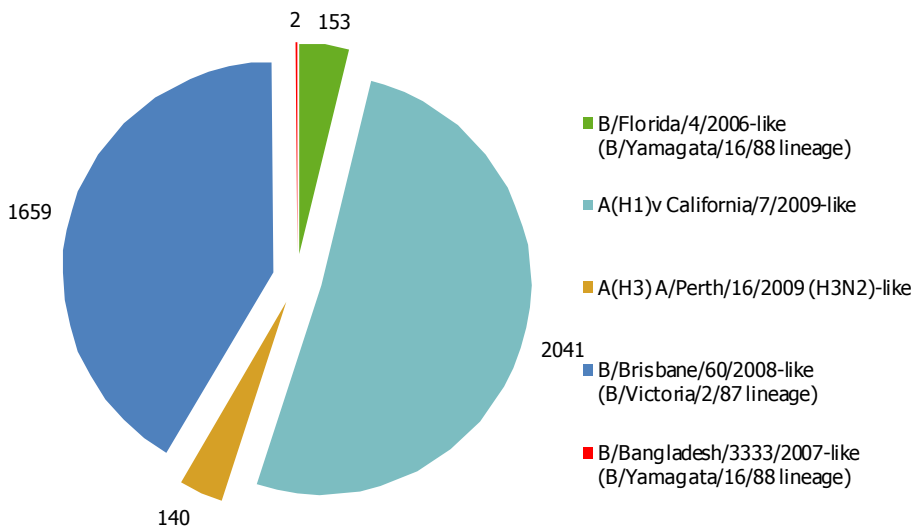
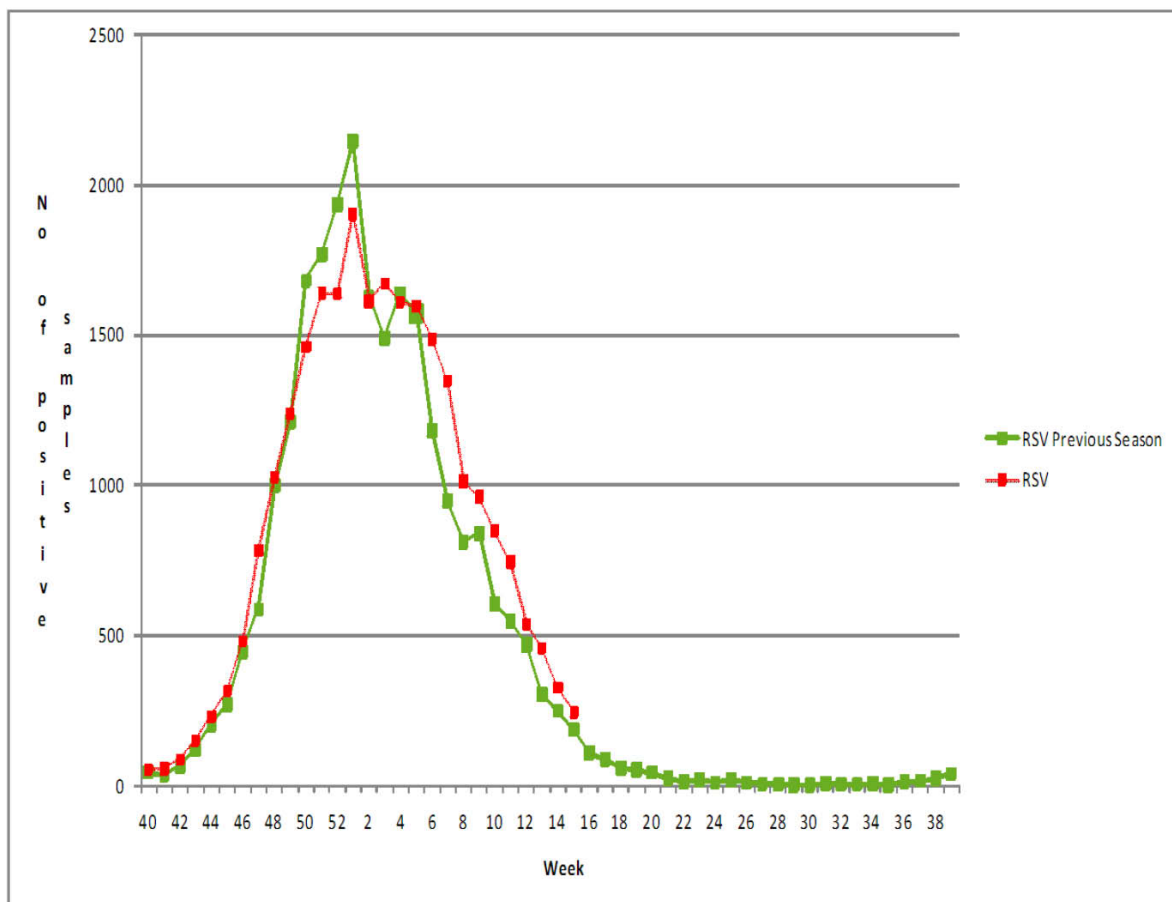


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2010–15/2011

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)	9	0	9	0	10	10(100)
A(H1)	0	0	0	0	0	0
A(H1)2009	3201	92 (2.9)	3201	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 40/2010–15/2011



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 15/2011, Belgium, Romania and Slovakia reported 10 SARI cases (Table 6). Since week 40/2010, 4798 SARI cases have been reported by 10 countries (Tables 4 and 6).

Of 3461 hospitalised cases with severe respiratory illness infected with an influenza virus reported since week 40/2010, 3164 (91.4%) were type A and 297 (8.6%) type B. Of 2787 sub-typed influenza viruses, 2765 (99.2%) were influenza A(H1N1)2009 and 22 (0.8%) were A(H3) (Table 6).

Since week 40/2010, 1926 SARI cases have been admitted to ICU, of which at least 1026 (53.3%) needed ventilation (Table 8).

In 3465 patients for whom information was available, 39.5% had no prior underlying condition, and obesity, morbid or not, was the most common underlying condition (Table 7).

Table 4: Cumulative number of SARI cases, weeks 40/2010–15/2011

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
Portugal	418		45		
Finland	80		15		
Belgium	934				
Spain	1397		159		
Malta	55	13.3	1	0.24	413609
Slovakia	198	3.64	21	0.39	5433385
Austria	373		12		
France	790		144		
Ireland	122		23		
Romania	431	6.72	30	0.47	6413821
Total	4798		450		

Figure 6: Number of SARI cases by week of onset, weeks 40/2010–15/2011

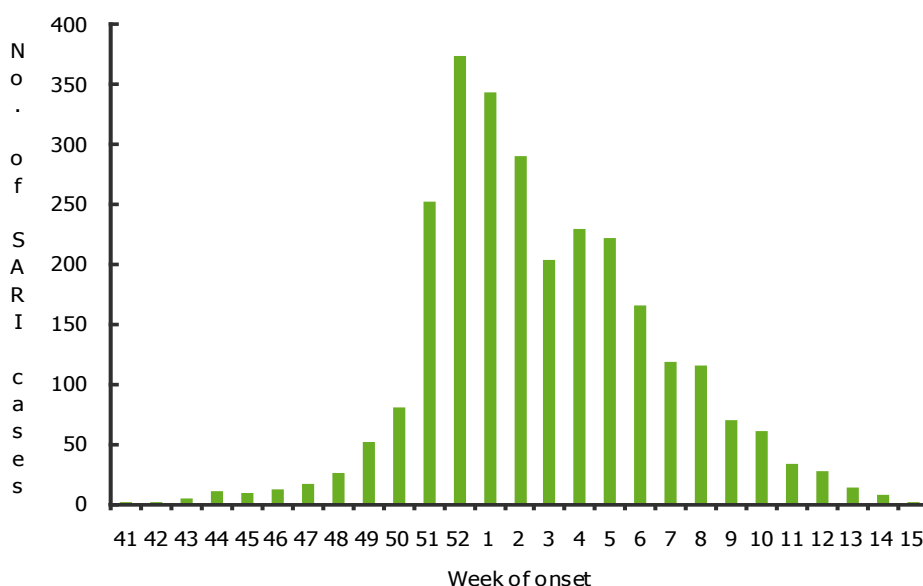


Table 5: Number of SARI cases by age and gender, weeks 40/2010–15/2011

Age groups	Male	Female
Under 2	349	256
2-17	374	332
18-44	605	581
45-59	680	488
>=60	599	468
Unknown	32	14
Total	2639	2139

Table 6: Number of SARI cases by influenza type and subtype, week 15/2011

Virus type/subtype	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	1	3164
A(H1)2009		2765
A(subtyping not performed)	1	377
A(H3)		22
Influenza B		297
Other Pathogen	1	37
Unknown	8	1300
Total	10	4798

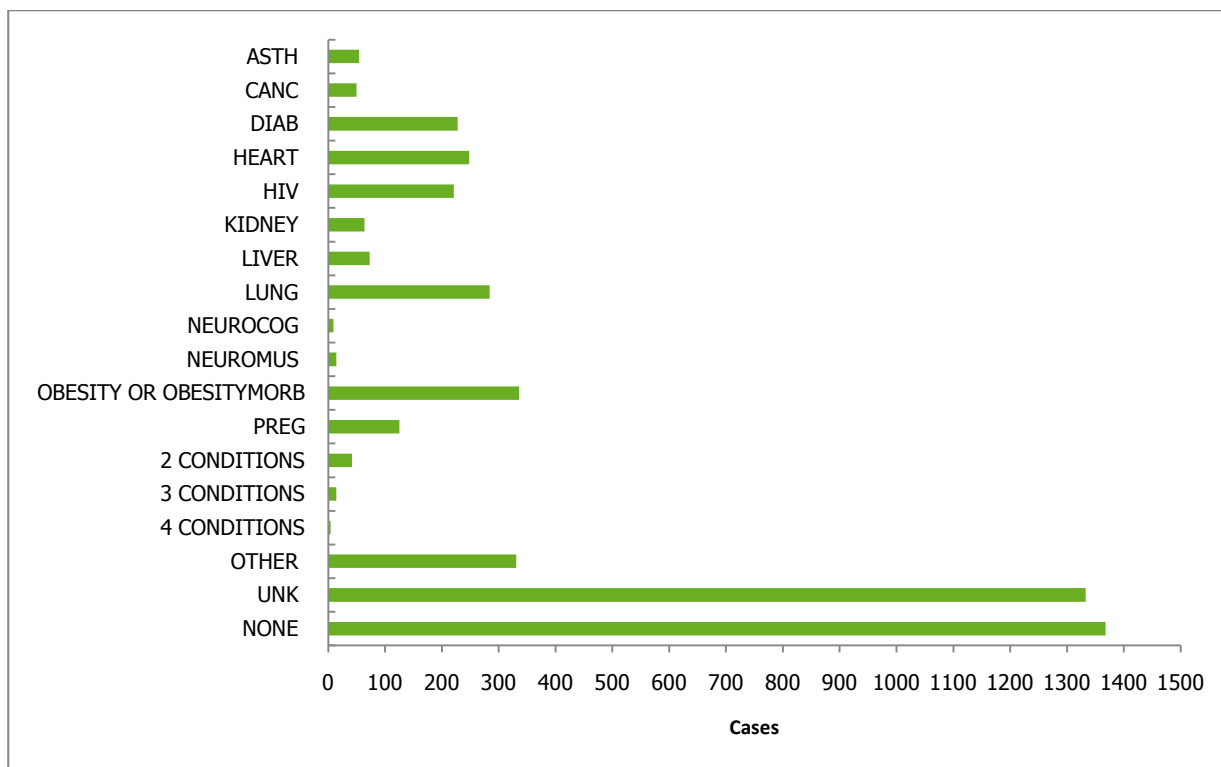
Table 8: Number of SARI cases by level of care and respiratory support, weeks 40/2010–15/2011

Respiratory support	ICU	Inpatient ward	Other	Unknown
No respiratory support available		1		
No respiratory support necessary	173	470	440	
Oxygen therapy	138	198	385	
Respiratory support given unknown	589	315	760	231
Ventilator	1026	17	6	49

Table 9: Number of SARI cases by vaccination status, weeks 40/2010–15/2011

Vaccination Status	Number Of Cases	Percentage of cases
Both, monovalent 2009 pandemic H1N1 and seasonal 2010 vaccination	125	2.6
Monovalent 2009 pandemic H1N1 vaccination	50	1
Not vaccinated	2177	45.4
Seasonal 2010 vaccination	259	5
Unknown	2187	45.6
TOTAL	4798	

Figure 7: Number of SARI cases by underlying condition, weeks 40/2010–15/2011



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 10: Number of underlying conditions in SARI cases by age group, weeks 40/2010–15/2011

Underlying condition/risk factor	0-11 months	1-4 years	5-14 years	15-24 years	25-64 years	>=65 years
Asthma	2	8	5	5	40	4
Cancer		1	1		39	12
Diabetes		3	4	3	165	78
Chronic heart disease	16	8	4	6	155	88
HIV/other immune deficiency		6	10	13	146	46
Chronic lung disease	12	19	8	8	172	72
No underlying condition	337	311	131	59	440	67
Obesity (BMI between 30 and 40)		1	3	9	236	32
Pregnancy			1	25	102	
Underlying condition unknown	81	148	69	70	742	211
Other (including all other conditions)	35	33	31	14	297	198

Table 11: Additional clinical complications in SARI cases by age group, weeks 40/2010–15/2011

Additional clinical complications	0-11 months	1-4 years	5y-14	15-24	25-64	>=65
Acute respiratory distress syndrome	51	91	50	50	653	135
Bronchiolitis	5	2			3	
Encephalitis		1	1	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	114	43	52	928	230
Sepsis/Multi-organ failure	1	1	2		44	9
Unknown	352	294	141	65	750	369

Country comments and specific information concerning hospitalised cases and mortality

This section is compiled from specific comments and published reports available from national website (if so indicated). It is intended to provide additional information on influenza-associated hospitalisations (including emergency hospital consultations), higher-level care load, and mortality.

Spain. Information concerning severe illness due to influenza infection with associated admission to hospitals comes from a surveillance system developed specifically for this purpose during the 2009/2010 pandemic season. Since week 40/2010 and up to week 15/2011, 1397 severe hospitalised confirmed influenza cases have been reported. Severely affected cases were mostly in the 15-to-64 year age groups (63%). 15% were less than five years old, and 18% were more than 64 years old. 26% of them had no known risk factors. Of 1395 cases with outcome information, 159 died (12% with no known risk factors). Of the severe cases, 895 had information available on the status of influenza vaccination for the 2010–11 season, and only 135 (15%) cases had been immunised. Monovalent pandemic vaccines 2009 were reported to have been received for 10% of hospitalised cases. Most of the severe and fatal cases were included in the groups that were recommended for influenza vaccination but had not been vaccinated this season.

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 databases.

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