

SURVEILLANCE REPORT

Weekly influenza surveillance overview

20 May 2011

Main surveillance developments in week 19/2011 (09 – 15 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.

- During week 19/2011, influenza activity was at its lowest level since the peak of the season in week 52/2010.
- For the first time, no influenza virus has been detected from sentinel sources. Six influenza A and six influenza B viruses have been detected in non-sentinel specimens. Details on circulating influenza viruses characterised by the CNRL are available in the recent [report](#) for April 2011.
- Three SARI cases unrelated to influenza virus infection were reported by two countries.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Low influenza activity was reported by 25 countries, associated with sporadic cases or no geographic spread, except for local activity in the UK (Northern Ireland). For more information, [click here](#).

Virological surveillance: No influenza virus was detected in specimens collected by sentinel practitioners. Only 12 influenza viruses were detected from non-sentinel sources. For more information, [click here](#).

Hospital surveillance of severe acute respiratory infection (SARI): Three SARI cases, unrelated to influenza virus infection, were notified by two countries. For more information, [click here](#).

Sentinel surveillance (ILI / ARI)

Weekly analysis – epidemiology

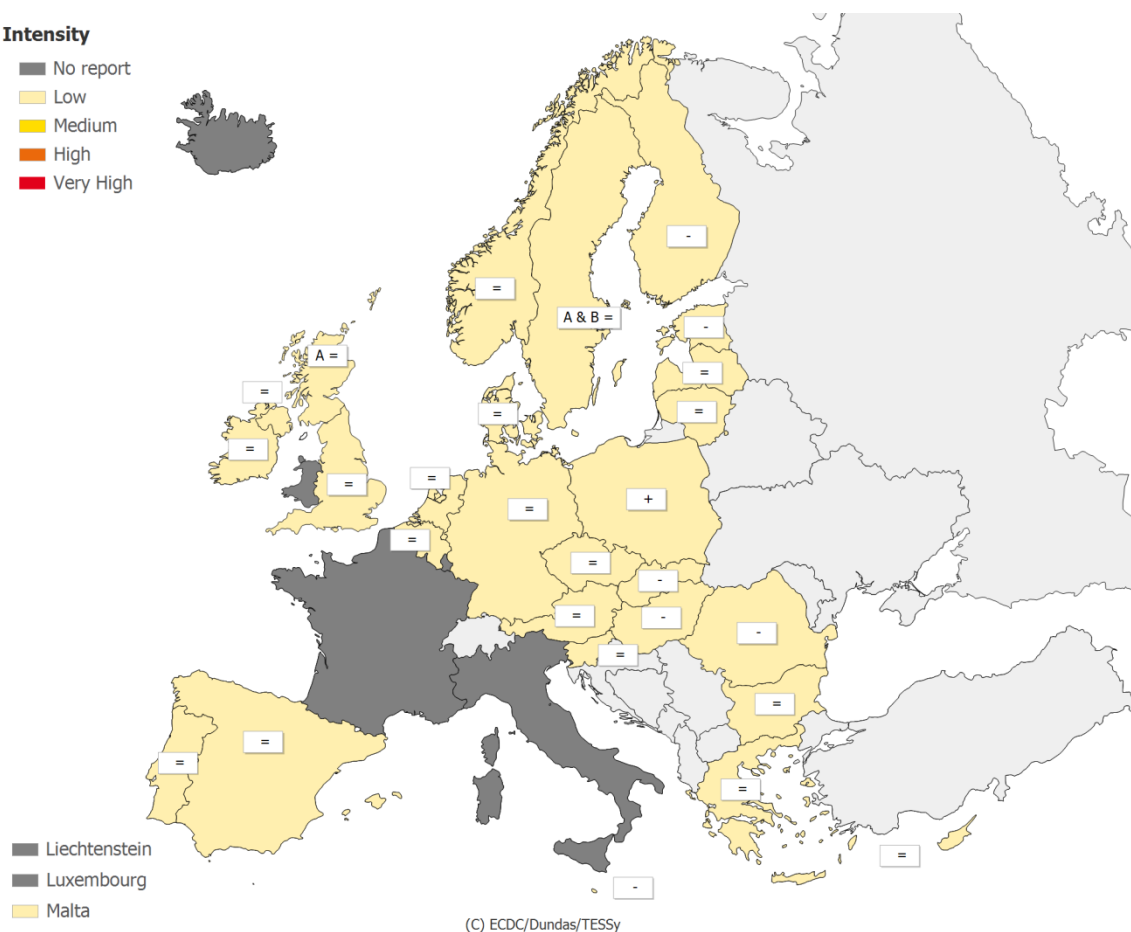
During week 19/2011, all 25 reporting countries experienced low intensity of influenza activity (Table 1, Map 1)

In terms of geographic spread, sporadic or no activity was reported by 24 countries and the UK (England and Scotland). Local activity was reported by the UK (Northern Ireland).

Stable or decreasing trends were reported by 23 countries and the UK, while Poland notified an increasing trend compared to the previous week (Table 1, Map 2).

Map 1: Intensity for week 19/2011**Intensity**

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



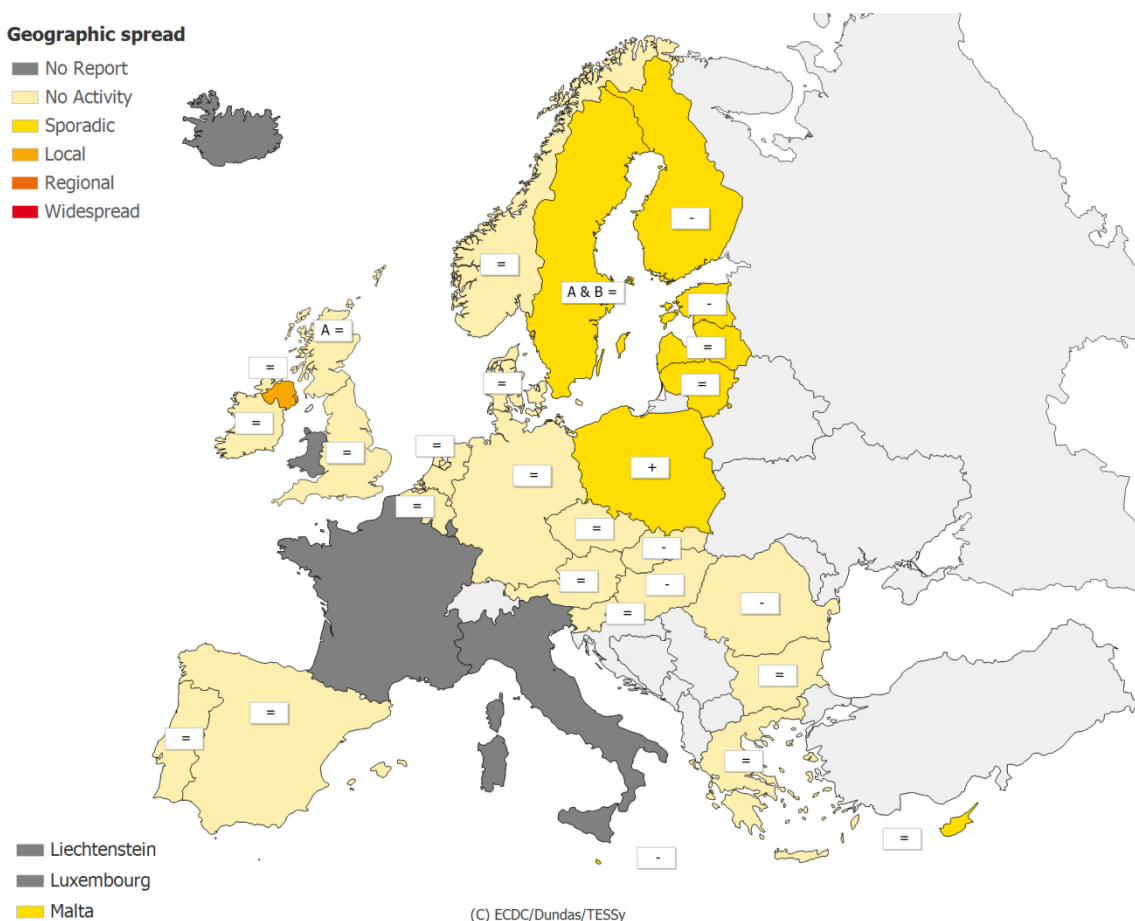
* A type/subtype is reported as dominant when > 40 % of all samples are positive for the type/subtype.

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 & B	Type A and B

Map 2: Geographic spread for week 19/2011**Geographic spread**

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



(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
		=	Stable clinical activity
Sporadic	Isolated cases of laboratory confirmed influenza infection	A	Type A
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 & B	Type A and B
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)		

Table 1: Epidemiological and virological overview by country, week 19/2011

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	0	None	0.0	-	-	Graphs	Graphs
Belgium	Low	No activity	Stable	5	None	0.0	10.5	1027.3	Graphs	Graphs
Bulgaria	Low	No activity	Stable	-	None	0.0	-	466.3	Graphs	Graphs
Cyprus	Low	Sporadic	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic	Low	No activity	Stable	-	-	0.0	12.8	620.0	Graphs	Graphs
Denmark	Low	No activity	Stable	2	None	0.0	24.1	-	Graphs	Graphs
Estonia	Low	Sporadic	Decreasing	3	None	0.0	3.6	218.9	Graphs	Graphs
Finland	Low	Sporadic	Decreasing	11	None	0.0	-	-	Graphs	Graphs
France				-	-	0.0	-	-		
Germany	Low	No activity	Stable	6	None	0.0	-	467.0	Graphs	Graphs
Greece	Low	No activity	Stable	1	-	0.0	38.8	-	Graphs	Graphs
Hungary	Low	No activity	Decreasing	1	None	0.0	19.8	-	Graphs	Graphs
Iceland				0	-	0.0	-	-	Graphs	Graphs
Ireland	Low	No activity	Stable	2	None	0.0	2.5	-	Graphs	Graphs
Italy				-	-	0.0	-	-		
Latvia	Low	Sporadic	Stable	0	None	0.0	-*	-*	Graphs	Graphs
Lithuania	Low	Sporadic	Stable	0	None	0.0	0.2	279.1	Graphs	Graphs
Luxembourg				-	-	0.0	-	-		
Malta	Low	Sporadic	Decreasing	-	-	0.0	-*	-*	<u>Graphs</u>	<u>Graphs</u>
Netherlands	Low	No activity	Stable	3	None	0.0	10.0	-	Graphs	Graphs
Norway	Low	No activity	Stable	0	None	0.0	20.1	-	Graphs	Graphs
Poland	Low	Sporadic	Increasing	1	None	0.0	18.6	-	Graphs	Graphs
Portugal	Low	No activity	Stable	0	None	0.0	7.0	-	Graphs	Graphs
Romania	Low	No activity	Decreasing	2	None	0.0	0.3	597.0	Graphs	Graphs
Slovakia	Low	No activity	Decreasing	-	-	0.0	106.5	1136.2	Graphs	Graphs
Slovenia	Low	No activity	Stable	0	None	0.0	0.0	605.7	Graphs	Graphs
Spain	Low	No activity	Stable	21	None	0.0	5.4	-	Graphs	Graphs
Sweden	Low	Sporadic	Stable	0	A & B	0.0	0.7	-	Graphs	Graphs
UK - England	Low	No activity	Stable	7	-	0.0	1.9	300.7	Graphs	Graphs
UK - Northern Ireland	Low	Local	Stable	1	-	0.0	7.8	254.7	Graphs	Graphs
UK - Scotland	Low	No activity	Stable	5	A	0.0	0.0	158.3	Graphs	Graphs
UK - Wales				-	-	0.0	-	-		
Europe				71		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 19/2011, 22 countries reported virological data. For the first time since the beginning of the season, none of the 71 sentinel specimens collected were positive for influenza virus. Of the non-sentinel source specimens (i.e. specimens collected for diagnostic purposes in hospitals), twelve were reported positive for influenza virus, six of type A and six of type B. Two of the type A viruses were sub-typed: one was A(H1)2009 and one was A(H3).

Since week 40/2010, of the 57 372 influenza detections in sentinel and non-sentinel specimens, 37 818 (65.9%) were influenza A and 19 554 (34.1%) were influenza B viruses. Of 27 240 sub-typed influenza A viruses, 26 536 (97.4%) were A(H1)2009 and 704 (2.6%) were A(H3) viruses (Table 2). Trends of 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): 2 259 as A/California/7/2009 (H1N1)-like; 1 945 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, 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 3 058 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, 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 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 19/2011, respiratory syncytial virus detections were at very low levels in 12 reporting countries (Figure 5).

Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2010–19/2011

Virus type/subtype	Current Period		Season	
	Sentinel	Non-sentinel	Sentinel	Non-sentinel
Influenza A	0	6	8365	29453
A(H1)2009	0	1	7445	19091
A (subtyping not performed)	0	4	694	9884
A (not subtypable)	0	0	0	0
A (H3)	0	1	226	478
A (H1)	0	0	0	0
Influenza B	0	6	5665	13889
Total Influenza	0	12	14030	43342

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 40/2010–19/2011

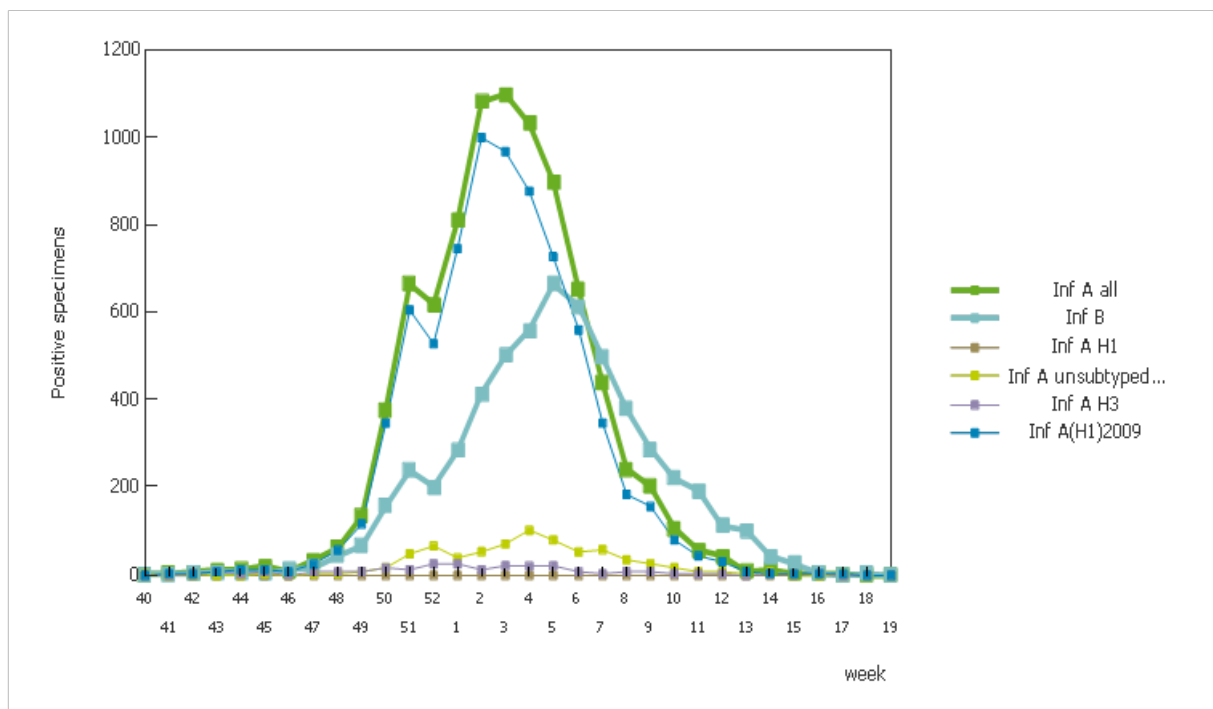


Figure 2: Number of non-sentinel specimens positive for influenza by type, subtype and week of report, weeks 40/2010–19/2011

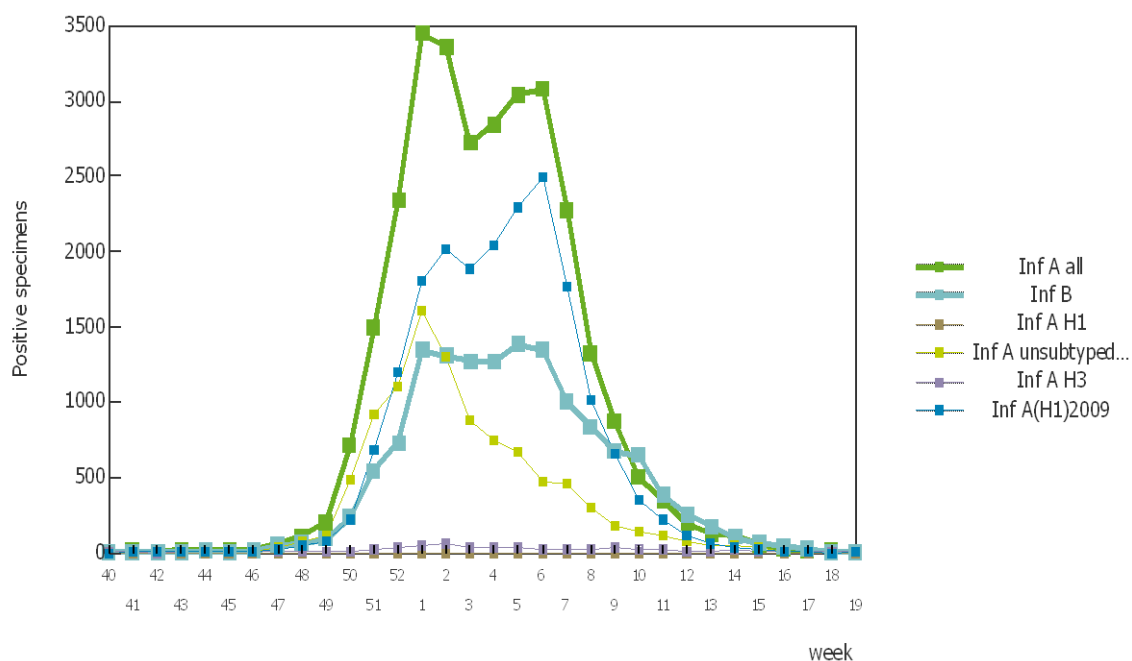


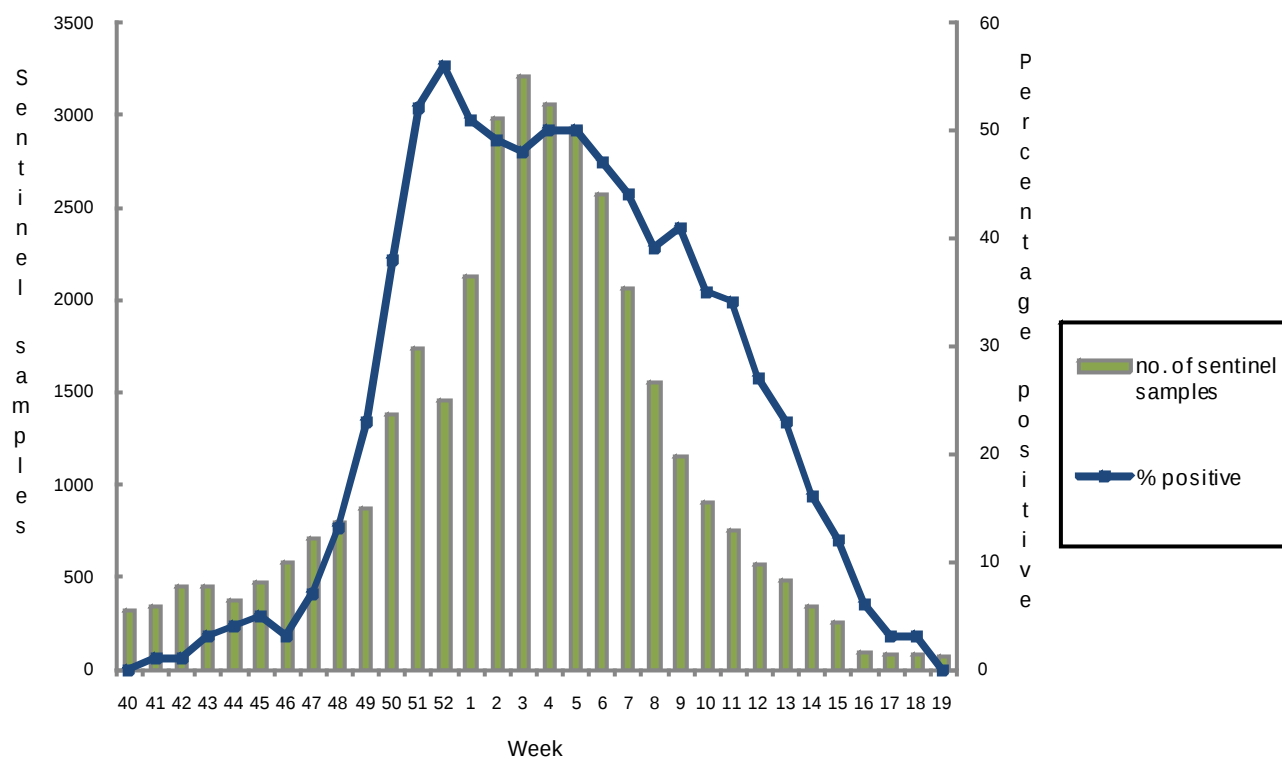
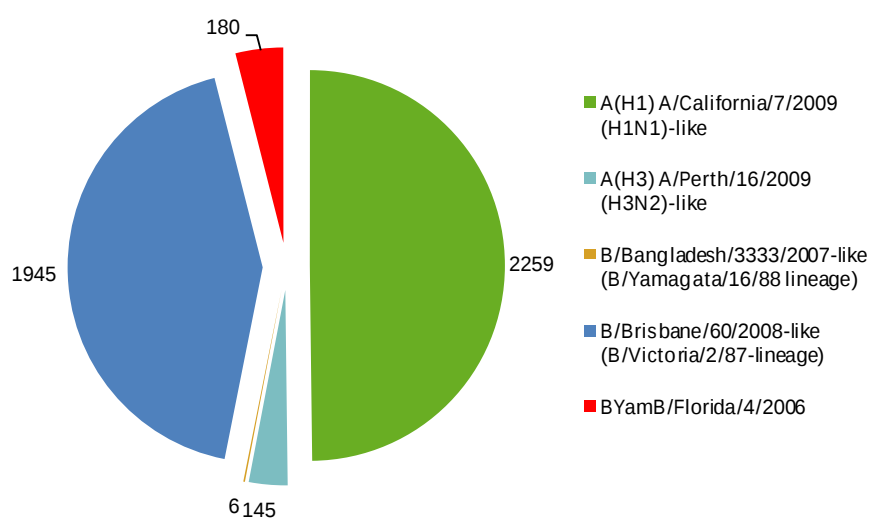
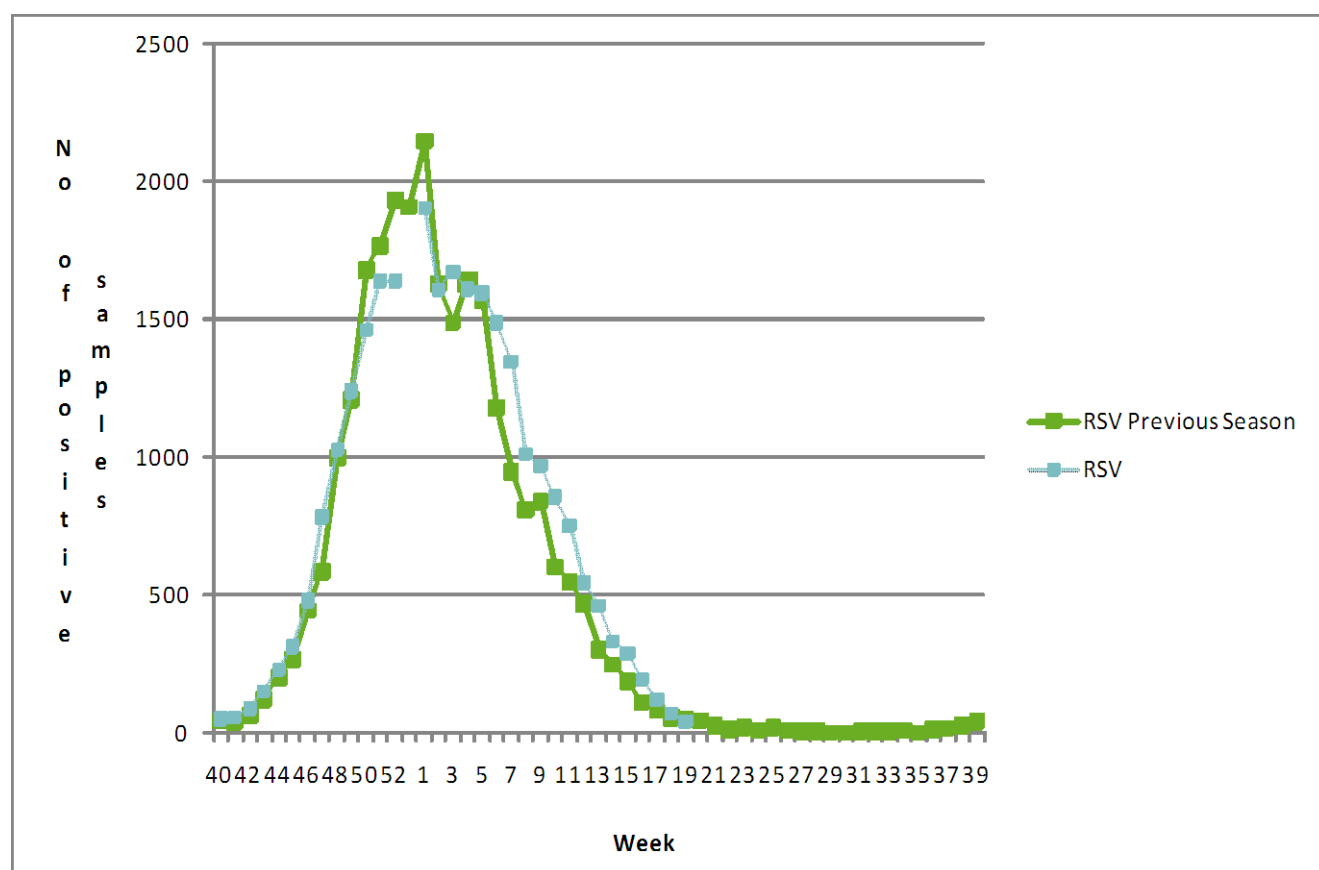
Figure 3: Proportion of sentinel samples positive for influenza, weeks 40/2010–19/2011**Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2010–19/2011**

Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2010–19/2011

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	3058	93 (3.0)	3058	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 40/2010–19/2011

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 19/2011, two SARI cases were reported by Romania and one case by Slovakia. Influenza viruses were not detected in these three patients.

Since week 40/2010, 5 065 SARI cases and 479 related fatalities have been reported by ten countries (Table 4). Of the 3 681 hospitalised cases with confirmed influenza virus infection, 3 365 (91.4%) were type A and 316 (8.6%) were type B. Of the 2 966 sub-typed influenza viruses, 2 943 (99.2%) were A(H1)2009 and 23 (0.8%) were A(H3) (Table 6). Since week 40/2011, of 2 034 SARI cases admitted to ICU, 1 029 (50.6%) required ventilation (Table 7).

Of 3 636 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–week 19/2011

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
Finland	81		16		
Romania	448	6.98	30	0.47	6413821
Belgium	953				
Spain	1613		187		
Malta	55	13.3	1	0.24	413609
Slovakia	212	3.9	21	0.39	5435273
Austria	373		12		
France	790		144		
Ireland	122		23		
Portugal	418		45		
Total	5065		479		

Figure 6: Number of SARI cases by week of onset, weeks 40/2010–week 19/2011

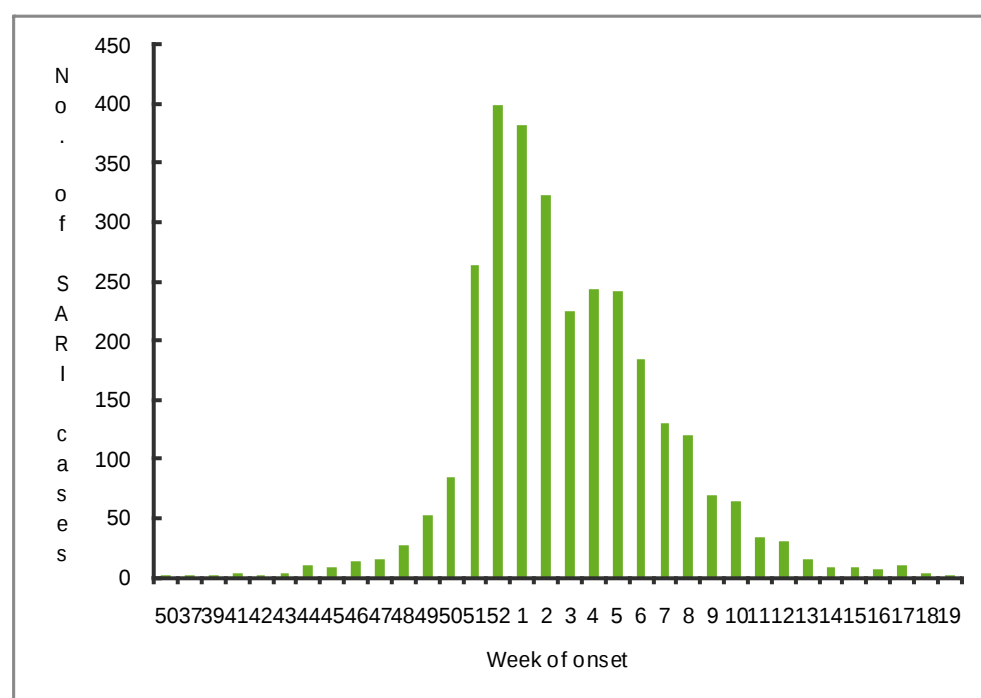


Table 5: Number of SARI cases by age and gender, weeks 40/2010–19/2011

Age groups	Male	Female
Under 2	363	264
2-17	389	354
18-44	649	621
45-59	711	516
>=60	641	491
Unknown	32	14
Total	2785	2260

Table 6: Number of SARI cases by influenza type and subtype, week 19/2011 and cumulative for the season

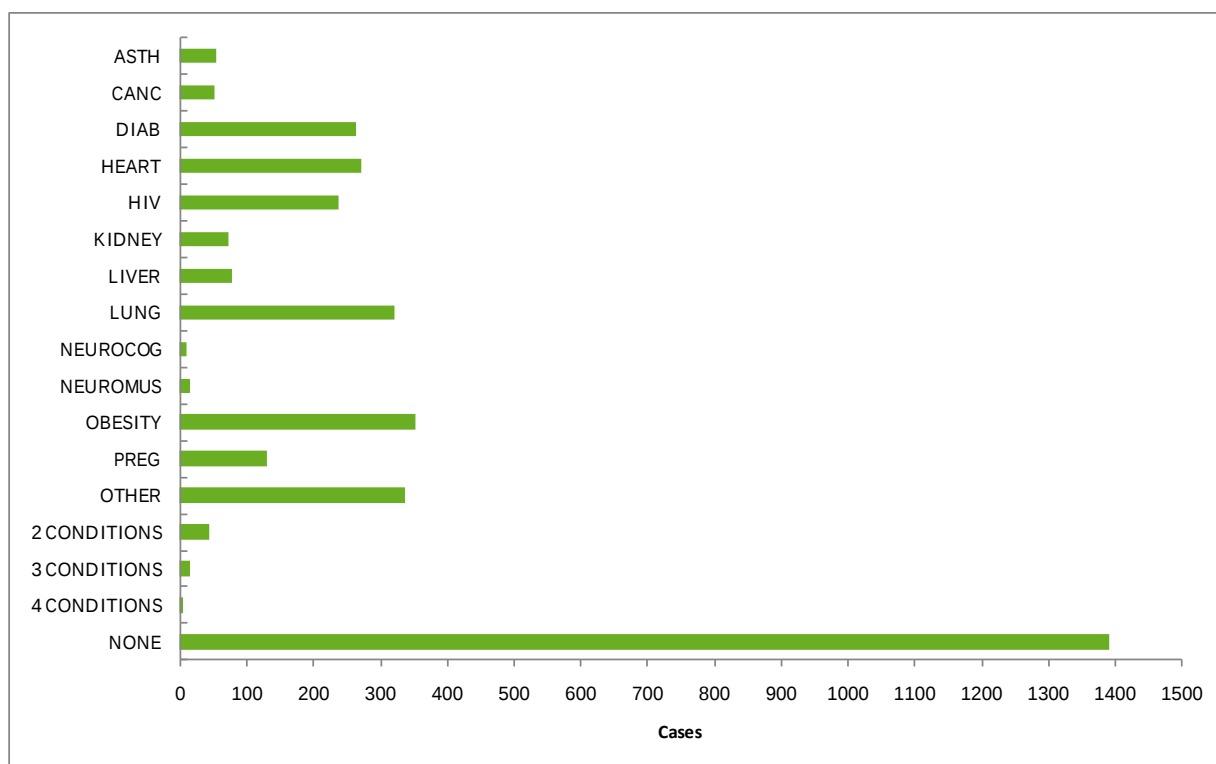
Virus type/subtype	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A		3365
A(H1)2009		2943
A(sub-typing not performed)		399
A(H3)		23
Influenza B		316
Other pathogen		39
Unknown	3	1345
Total	3	5065

Table 7: Number of SARI cases by level of care and respiratory support, weeks 40/2010–19/2011

Respiratory support	ICU	In-patient ward	Other	Unknown
No respiratory support available		1		
No respiratory support necessary	173	471	449	
Oxygen therapy	145	204	395	
Respiratory support given unknown	687	322	880	236
Ventilator	1029	17	6	50

Table 8: Number of SARI cases by vaccination status, weeks 40/2010–19/2011

Vaccination Status	Number Of Cases	Percentage of cases
Both, monovalent 2009 pandemic H1N1 and seasonal 2010 vaccination	131	2.6
Monovalent 2009 pandemic H1N1 vaccination	56	1
Not vaccinated	2357	46.5
Seasonal 2010 vaccination	287	6
Unknown	2234	44.1
TOTAL	5065	

Figure 7: Number of SARI cases by underlying condition, weeks 40/2010–19/2011

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 40/2010–19/2011

Underlying condition/risk factor	0-11 months	1-4 years	5-14 years	15-24	25-64	>=65
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	164	97
HIV/other immune deficiency		7	11	15	158	47
Chronic lung disease	12	20	8	10	194	84
No underlying condition	346	320	134	59	441	67
Obesity (BMI between 30 and 40)		1	3	9	236	33
Pregnancy			1	25	107	
Underlying condition unknown	81	167	71	76	803	219
Other (including all other conditions)	36	35	32	16	318	203

Table 10: Additional clinical complications in SARI cases by age group, weeks 40/2010–19/2011

Additional clinical complications	0-11 months	1-4 years	5-14 years	15-24	25-64	> = 65
Acute respiratory distress syndrome	52	97	53	51	662	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	130	47	63	1053	270
Sepsis/Multi-organ failure	1	1	2		45	9
Unknown	361	307	141	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.

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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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