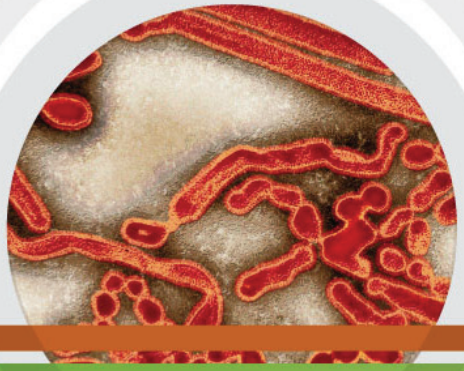


SURVEILLANCE REPORT

Weekly influenza surveillance overview

14 May 2012

Main surveillance developments in week 18/2012 (30 April – 6 May 2012)

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

- All countries but Slovakia reported low-intensity influenza activity.
- Of 154 sentinel specimens tested, 23 (14.9%) were positive for influenza virus. This proportion has been continuously decreasing over the past 10 weeks
- The A(H3N2) influenza viruses examined at the WHO Collaborating Centre in London show increasing evidence of an imperfect match between the circulating viruses and the A(H3N2) vaccine antigen used in 2011. There has also been a significant rise in the proportion of B/Yamagata viruses among the B viruses detected this season. This supports the WHO and EMA recommendation to modify two components in the trivalent vaccines for the 2012/2013 Northern Hemisphere season.
- One SARI case, unrelated to influenza, was reported by Romania.

The 2011-12 influenza season is coming to its end. The formal influenza surveillance season finishes after the week 20 report.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): All countries reported low intensity influenza activity with the exception of Slovakia, which reported medium intensity. For more information, **click here**.

Virological surveillance: Of 154 sentinel specimens tested, 23 (14.9%) were positive for influenza virus, of which 11 (47.8%) were type A and 12 (52.2%) were type B. The proportion of positive specimens has been decreasing for ten consecutive weeks. For more information, **click here**.

Hospital surveillance of severe acute respiratory infection (SARI): During week 18/2012, one SARI case, unrelated to influenza, was reported by Romania. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

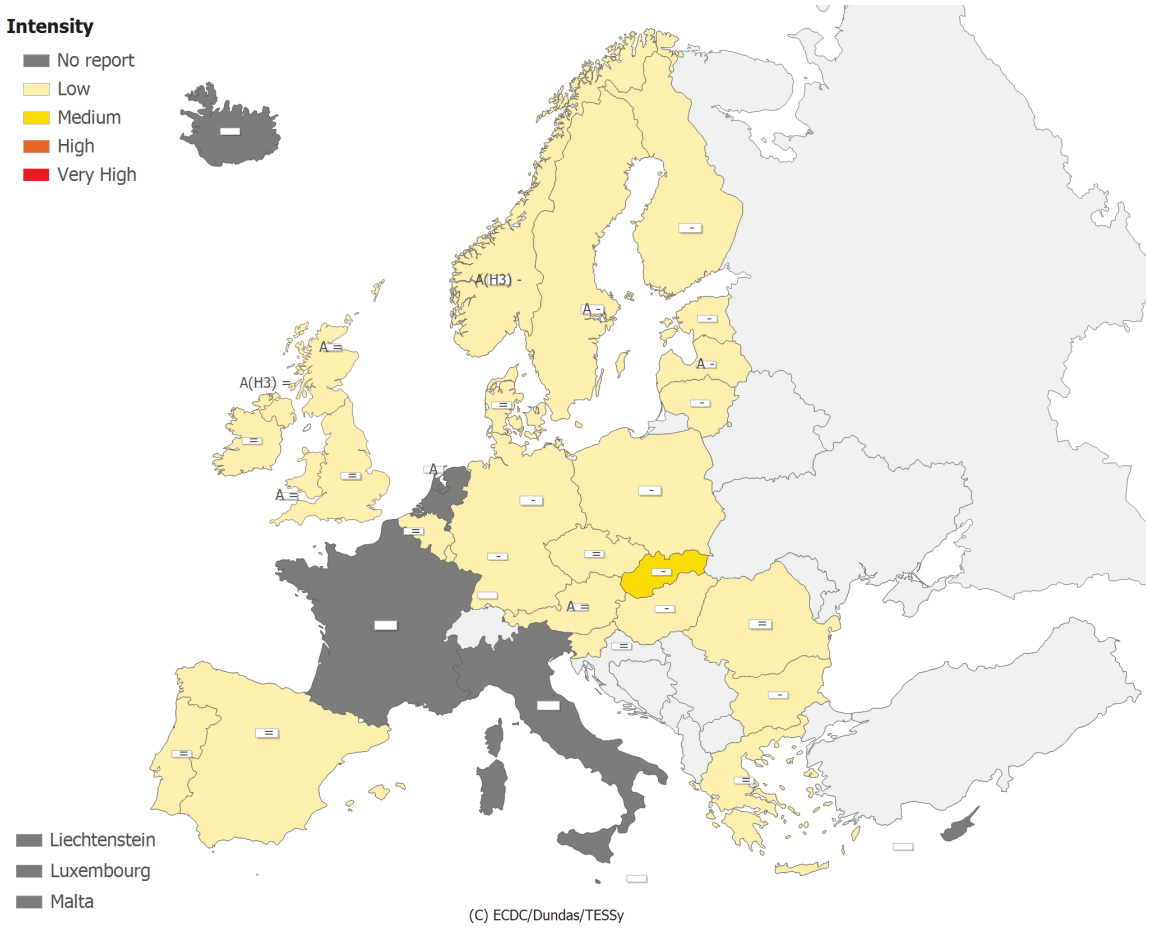
Weekly analysis – epidemiology

During week 18/2012, 23 countries reported clinical data. All countries reported low intensity influenza activity except for Slovakia, which reported medium intensity (Table 1, Map 1). Slovakia is the only country that has reported medium intensity over the past three weeks.

Geographic spread was reported as sporadic by 15 countries and local by Austria and Latvia. No geographic spread was reported by Bulgaria, Denmark, Luxembourg, Poland, Portugal and Slovenia (Table 1, Map 2).

Stable trends in clinical activity were reported by 11 countries. A decreasing trend was reported by 12 countries (Table 1, Map 2).

Map 1: Intensity for week 18/2012

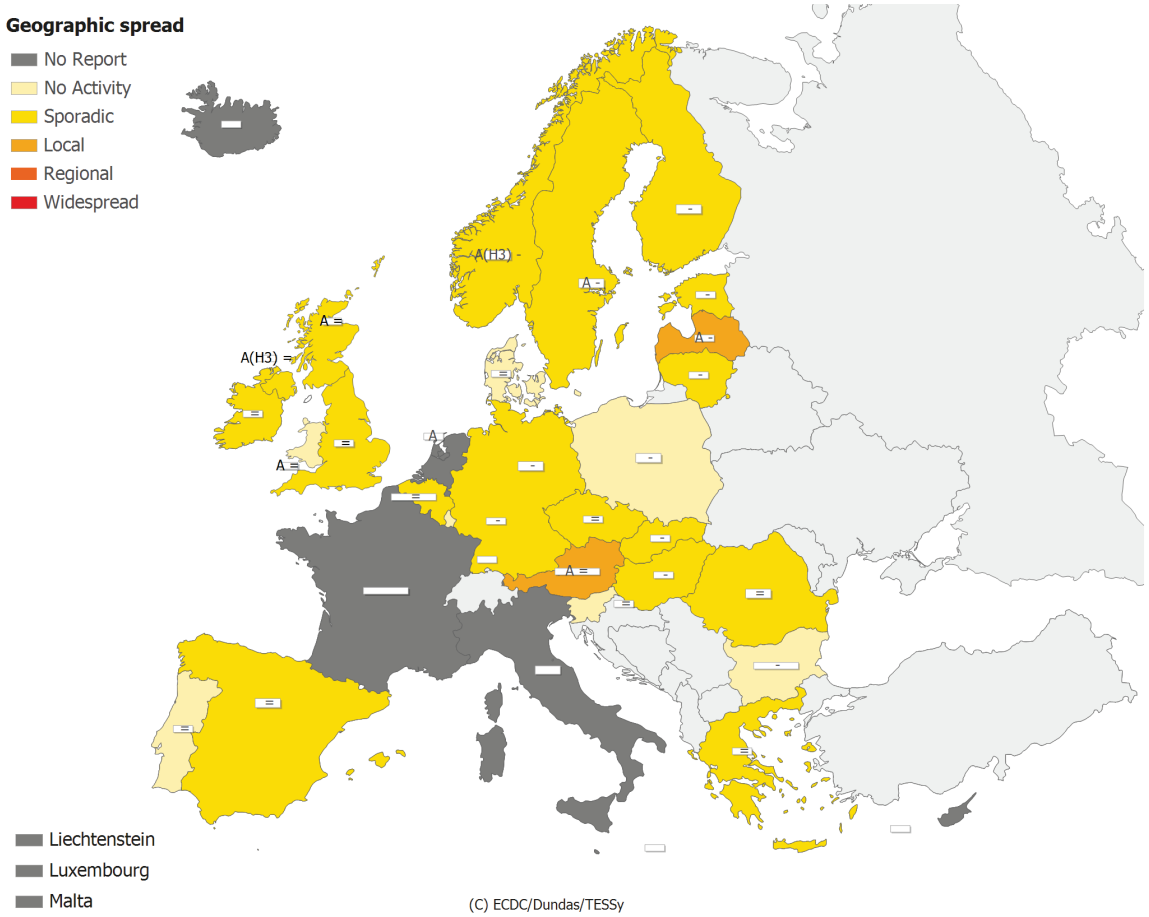


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

Legend:

No report	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(H3)**	Type A, Subtype H3

Map 2: Geographic spread for week 18/2012



* 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
A(H3)	Type A, Subtype H3

Table 1: Epidemiological and virological overview by country, week 18/2012

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	Local	Stable	0	A	0.0	-	-	Graphs	Graphs
Belgium	Low	Sporadic	Stable	1	-	0.0	25.6	1401.3	Graphs	Graphs
Bulgaria	Low	No activity	Decreasing	0	None	0.0	-	339.3	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	Sporadic	Stable	7	None	14.3	19.5	663.1	Graphs	Graphs
Denmark	Low	No activity	Stable	0	None	0.0	15.3	-	Graphs	Graphs
Estonia	Low	Sporadic	Decreasing	4	None	25.0	6.1	209.8	Graphs	Graphs
Finland	Low	Sporadic	Decreasing	21	None	4.8	-	-	Graphs	Graphs
France				-	-	0.0	-	-		
Germany	Low	Sporadic	Decreasing	17	None	11.8	-	590.2	Graphs	Graphs
Greece	Low	Sporadic	Stable	3	None	0.0	30.9	-	Graphs	Graphs
Hungary	Low	Sporadic	Decreasing	3	None	66.7	11.0	-	Graphs	Graphs
Iceland				0	None	0.0	-	-	Graphs	Graphs
Ireland	Low	Sporadic	Stable	4	None	0.0	4.7	-	Graphs	Graphs
Italy				-	-	0.0	-	-		
Latvia	Low	Local	Decreasing	0	A	0.0	7.2	466.1	Graphs	Graphs
Lithuania	Low	Sporadic	Decreasing	0	None	0.0	1.4	329.9	Graphs	Graphs
Luxembourg	Low	No activity	Decreasing	1	None	0.0	-*	-*	Graphs	Graphs
Malta				-	-	0.0	-	-		
Netherlands				6	A	50.0	-	-	Graphs	Graphs
Norway	Low	Sporadic	Decreasing	1	A(H3)	100.0	14.6	-	Graphs	Graphs
Poland	Low	No activity	Decreasing	0	None	0.0	53.5	-	Graphs	Graphs
Portugal	Low	No activity	Stable	1	None	0.0	6.6	-	Graphs	Graphs
Romania	Low	Sporadic	Stable	8	None	0.0	0.9	345.9	Graphs	Graphs
Slovakia	Medium	Sporadic	Decreasing	1	None	100.0	106.9	1207.8	Graphs	Graphs
Slovenia	Low	No activity	Stable	0	None	0.0	0.0	421.2	Graphs	Graphs
Spain	Low	Sporadic	Stable	30	None	23.3	8.2	-	Graphs	Graphs
Sweden	Low	Sporadic	Decreasing	3	A	0.0	1.6	-	Graphs	Graphs
UK - England	Low	Sporadic	Stable	20	None	5.0	6.3	344.2	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Stable	5	A(H3)	40.0	12.6	325.3	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	18	A	5.6	10.2	449.7	Graphs	Graphs
UK - Wales	Low	No activity	Stable	0	A	0.0	2.4	-	Graphs	Graphs
Europe				**154**		**14.9**				Graphs

**Incidence per 100 000 is not calculated for these countries as no population denominator is provided.*
Liechtenstein does not report 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) participate. 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 18/2012, 25 countries, reported virological data. Of 154 sentinel specimens tested, 23 (14.9%) were positive for influenza virus (Table 1, Figure 1), of which 11 (47.8%) were type A and 12 (52.2%) were type B (Table 2). This is the tenth consecutive week with decreases in both the absolute number of influenza A and B detections and the proportion of influenza-positive sentinel specimens, indicating that the influenza season at EU/EEA level is ending (Figure 1).

All of the 10 influenza A viruses from sentinel specimens subtyped in week 18/2012 were A(H3) (Table 2, Figure 2).

Of the 9 134 influenza viruses detected in sentinel specimens since week 40/2011, 8 169 (89.4%) were type A and 965 (10.6%) were type B. Of 7 275 influenza A viruses subtyped, 7 178 (98.7%) were A(H3) viruses and 97 (1.3%) were A(H1)pdm09 (Table 2, Figure 2). The lineage of 183 sentinel influenza B viruses has been determined: 112 (61.2%) were B-Victoria lineage and 71 (38.8%) were B-Yamagata lineage (Table 2). Proportions were comparable in non-sentinel specimens (Figure 3).

Since week 40/2011, 1 730 antigenic characterisations of influenza viruses have been reported, of which 1 301 (75.2%) were A/Perth/16/2009 (H3N2)-like viruses (Figure 4).

Since week 40/2011, 1 220 genetic characterisations of viruses have been reported, 1 053 (86.3%) of which have been A(H3) viruses. Of the latter, 628 (59.6%) were falling within the A/Victoria/208/2009 clade, genetic group 3 represented by A/Stockholm/18/2011 (Figure 5).

More details on the antigenic and genetic characteristics of circulating viruses can be found in the March report prepared by the Community Network of Reference Laboratories (CNRL) coordination team. Important findings included the fact that many of the recently circulating A(H3N2) viruses yielded low titres with post-infection ferret antisera raised against the A/Perth/16/2009 vaccine virus. This is consistent with the decision of WHO to recommend a change to an A/Victoria/361/2011-like virus in the trivalent influenza vaccines for the Northern Hemisphere 2012–13 influenza season. Influenza B viruses of both the B/Victoria/2/87 and B/Yamagata/16/88 lineages have been detected this season. The B/Victoria lineage has been more prevalent based on reporting to TESSy, while for specimens received at the WHO Collaborating Centre in London, the more prevalent lineage has been B/Yamagata. This represents a considerable increase in the relative circulation of influenza B/Yamagata lineage viruses compared with recent seasons.

Between week 40/2011 and week 18/2012, antiviral susceptibility data was reported from Germany, Italy, the Netherlands, Norway, Portugal, Romania, Sweden and the UK. None of the A(H1N1)pdm09, A(H3N2) and B viruses tested for neuraminidase inhibitor susceptibility were resistant. All A(H1N1)pdm09 and A(H3N2) viruses screened for M2 susceptibility to the adamantane class of antivirals were resistant (Table 3).

In week 18/2012, 12 countries reported 111 respiratory syncytial virus detections, continuing the decline seen since the beginning of 2012 (Figure 6).

Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2011–18/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	11	137	8169	22329
A(H1)pdm09	0	2	97	299
A(H3)	10	22	7178	6808
A(sub-typing not performed)	1	113	894	15222
Influenza B	12	42	965	1140
B(Vic) lineage	0	0	112	70
B(Yam) lineage	1	0	71	66
Unknown lineage	11	42	782	1004
Total influenza	**23**	**179**	**9134**	**23469**

Note: A(H1)pdm09 and A(H3) include both N-sub-typed and non-N-sub-typed viruses

Figure 1: Proportion of sentinel specimens positive for influenza virus, weeks 40/2011–18/2012

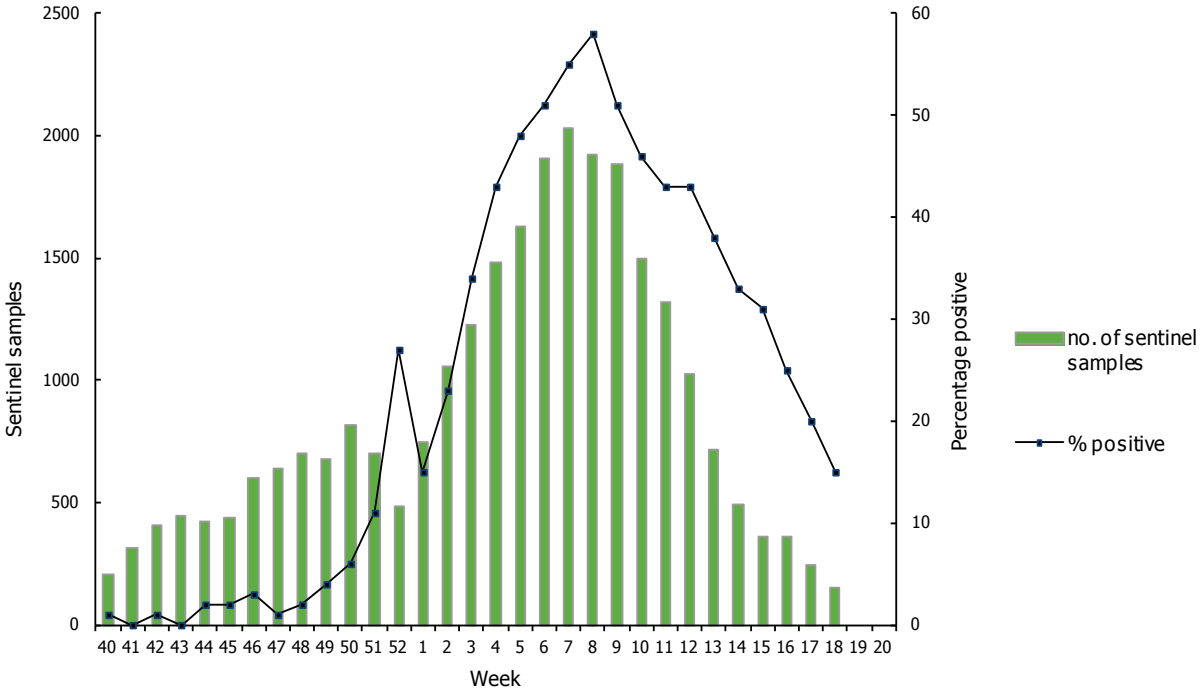


Figure 2: Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40/2011–18/2012

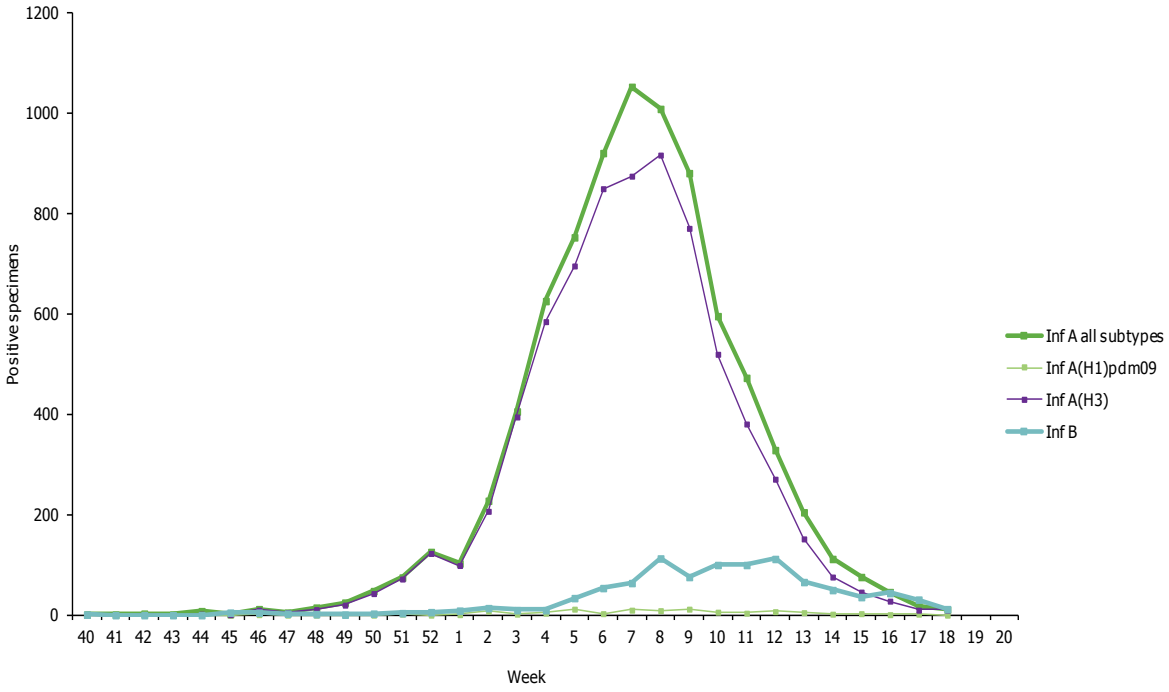


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2011–18/2012

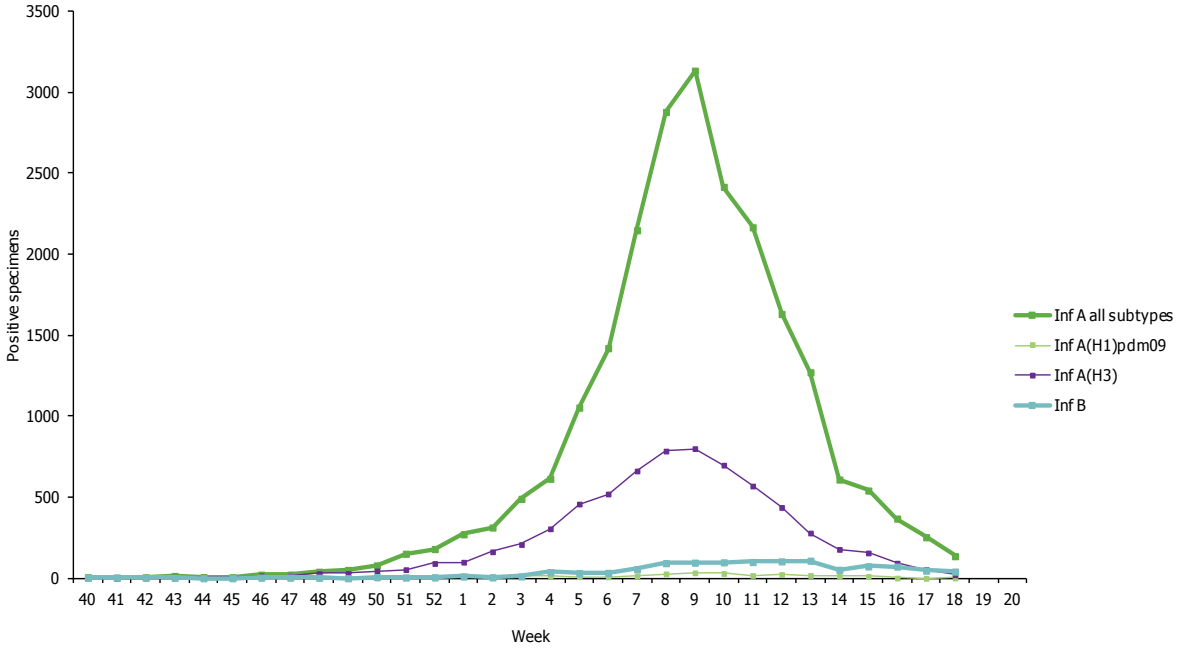


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–18/2012

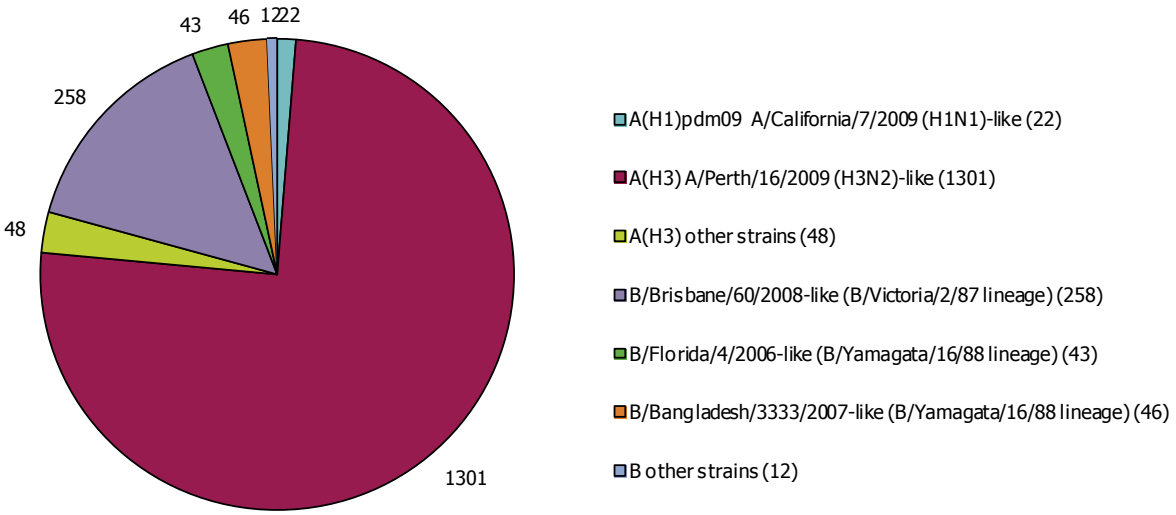


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–18/2012

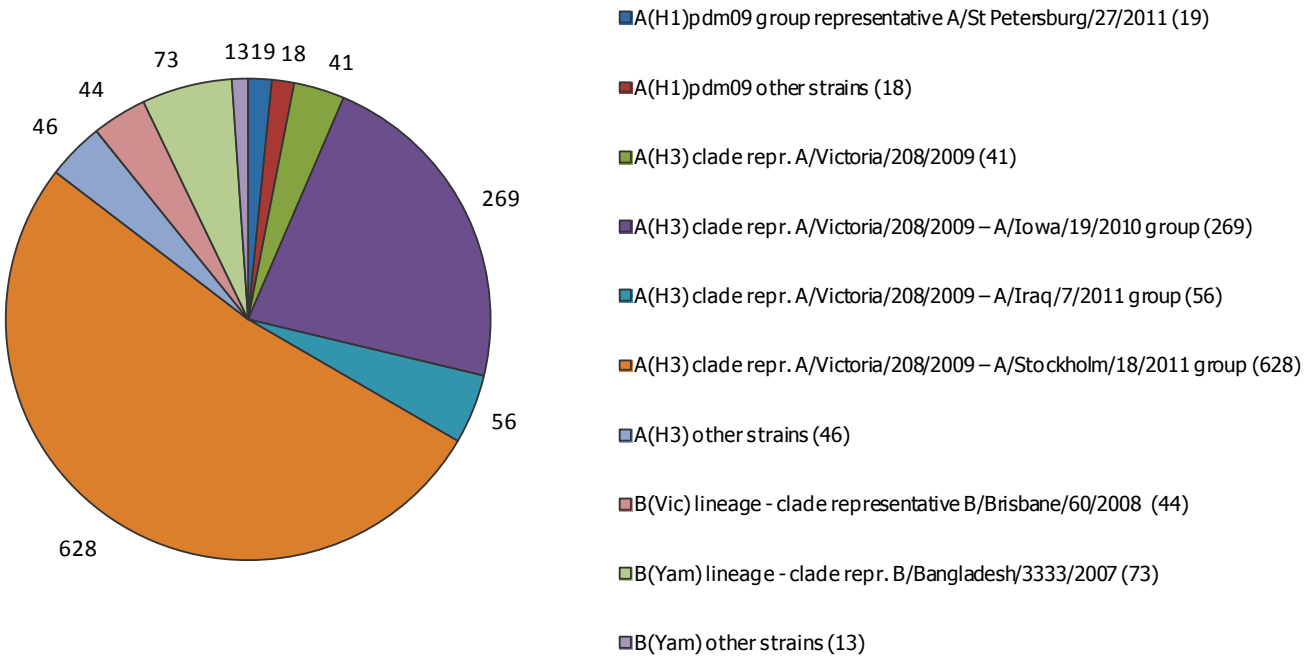
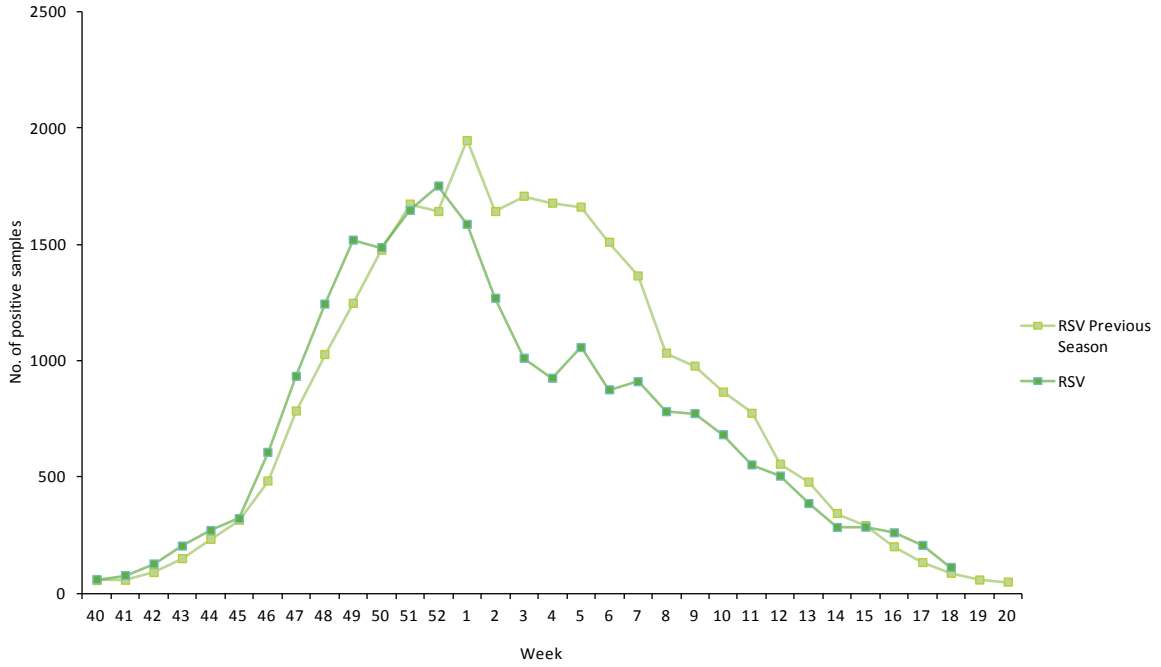


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2011–18/2012

Virus type and sub-type	Resistance to neuraminidase inhibitors				Resistance to M2 inhibitors	
	Oseltamivir		Zanamivir		Isolates tested	Resistant n (%)
	Isolates tested	Resistant n (%)	Isolates tested	Resistant n (%)		
A(H3)	605	0	597	0	146	146 (100%)
A(H1N1)pdm2009	44	0	44	0	7	7 (100%)
B	41	0	40	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 6: Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2011–18/2012



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 influenza disease

Weekly analysis of severe acute respiratory infection – SARI

Since week 40/2011, a total of 1 820 SARI cases, including 108 fatalities, have been reported by seven countries (Table 4, Figure 7). Where patient information was available, the male:female ratio was 1.2 (Table 5).

During week 18/2012, one SARI case, unrelated to influenza, was reported by Romania (Figure 7).

Of the 1 313 cases reported since week 40/2011 for which influenza virus infection has been confirmed, 1 265 (96.3%) were type A and 48 (3.7%) were type B. Of the 817 influenza A viruses subtyped, 770 (94.2%) were due to A(H3) and 47 (5.8%) to A(H1)pdm09 (Table 6).

Table 4: Cumulative number of SARI cases, weeks 40/2011–18/2012

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	340	5.85	6	0.1	5813728
Slovakia	28	0.51	1	0.02	5440078
Ireland	18		3		
France	310		43		
United Kingdom	252	0.43			59255492
Spain	600		47		
Belgium	272		8		
Total	**1820**		**108**		

Figure 7: Number of SARI cases by week of onset, weeks 40/2011–18/2012

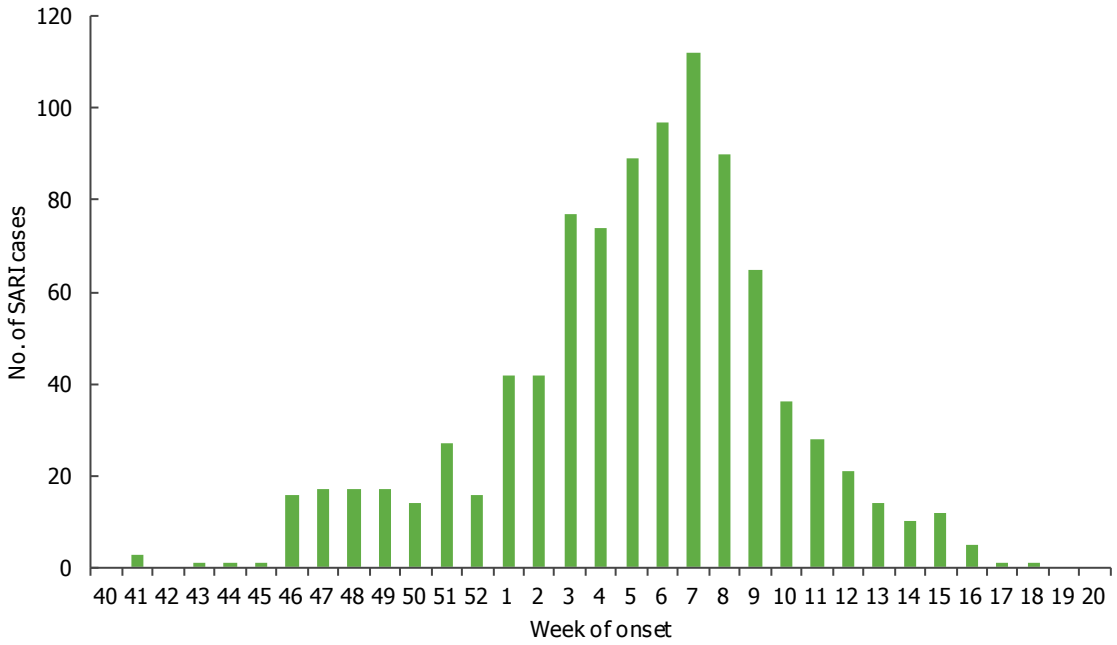


Table 5: Number of SARI cases by age and gender, weeks 40/2011–18/2012

Age groups	Male	Female	Unknown
Under 2	174	121	1
2-17	158	117	4
18-44	75	77	1
45-59	105	88	
>=60	329	304	2
Unknown	8	3	253
Total	**849**	**710**	**261**

Table 6: Number of SARI cases by influenza type and subtype and other pathogens, week 18/2012 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A		1265
A(H1)pdm09		47
A(H3)		770
A(sub-typing not performed)		448
Influenza B		48
Other pathogen		6
Unknown	1	501
Total	**1**	**1820**

This report was written by an editorial team at the European Centre for Disease Prevention and Control (ECDC): Eeva Broberg, Flaviu Plata, Julien Beauté 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 Amparo Larrauri Cámara (Instituto de Salud Carlos III, Spain) and Suzie Coughlan (UCD National Virus Reference Laboratory, Ireland). In addition, the report is reviewed by experts of WHO Regional Office for Europe.