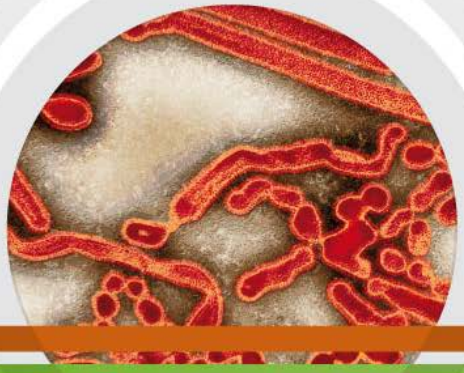


SURVEILLANCE REPORT

Weekly influenza surveillance overview

28 March 2013

Main surveillance developments in week 12/2013 (18–24 March 2013)

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

Weekly reporting on influenza surveillance in Europe for the 2012–2013 season started in week 40/2012. Active influenza transmission began around week 49/2012 with ILI/ARI rates peaking in almost all countries between weeks 52/2012 and 8/2013.

- Nine countries reported wide geographic spread with seven of them reporting medium intensity activity.
- Decreasing or stable trends were reported by almost all reporting countries.
- 45% of tested sentinel specimens were positive for influenza virus. This proportion has declined since week 5/2013, but still remained at a high level, consistent with continuing significant influenza activity.
- Since week 40/2012, 47% of sentinel surveillance specimens testing positive for influenza virus have been type A, and 53% type B. Of the influenza A viruses subtyped, the proportion of A(H1N1)pdm09 viruses has been 63%.
- For week 12/2013, 24 hospitalised laboratory-confirmed influenza cases were reported by four reporting countries.

In all reporting countries, influenza activity continued to decline or had already returned to baseline levels. After more than three months of active transmission, a long period compared to other years, the 2012–2013 influenza season is waning and slowly moving towards its close.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Decreasing or stable trends were reported by all reporting countries except Poland which reported an increasing trend but low influenza activity. For more information, **click here**.

Virological surveillance: For week 12/2013, 19 countries and the UK (Northern Ireland and Wales) tested 826 sentinel specimens, of which 45% were positive for influenza virus. For more information, **click here**.

Hospital surveillance of influenza laboratory-confirmed cases: For week 12/2013, 24 hospitalised laboratory-confirmed influenza cases were reported. Since week 40/2012, 2 700 hospitalised laboratory-confirmed influenza cases and 177 related fatalities have been reported. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

For week 12/2013, 25 countries and the UK (Northern Ireland and Wales) reported clinical data.

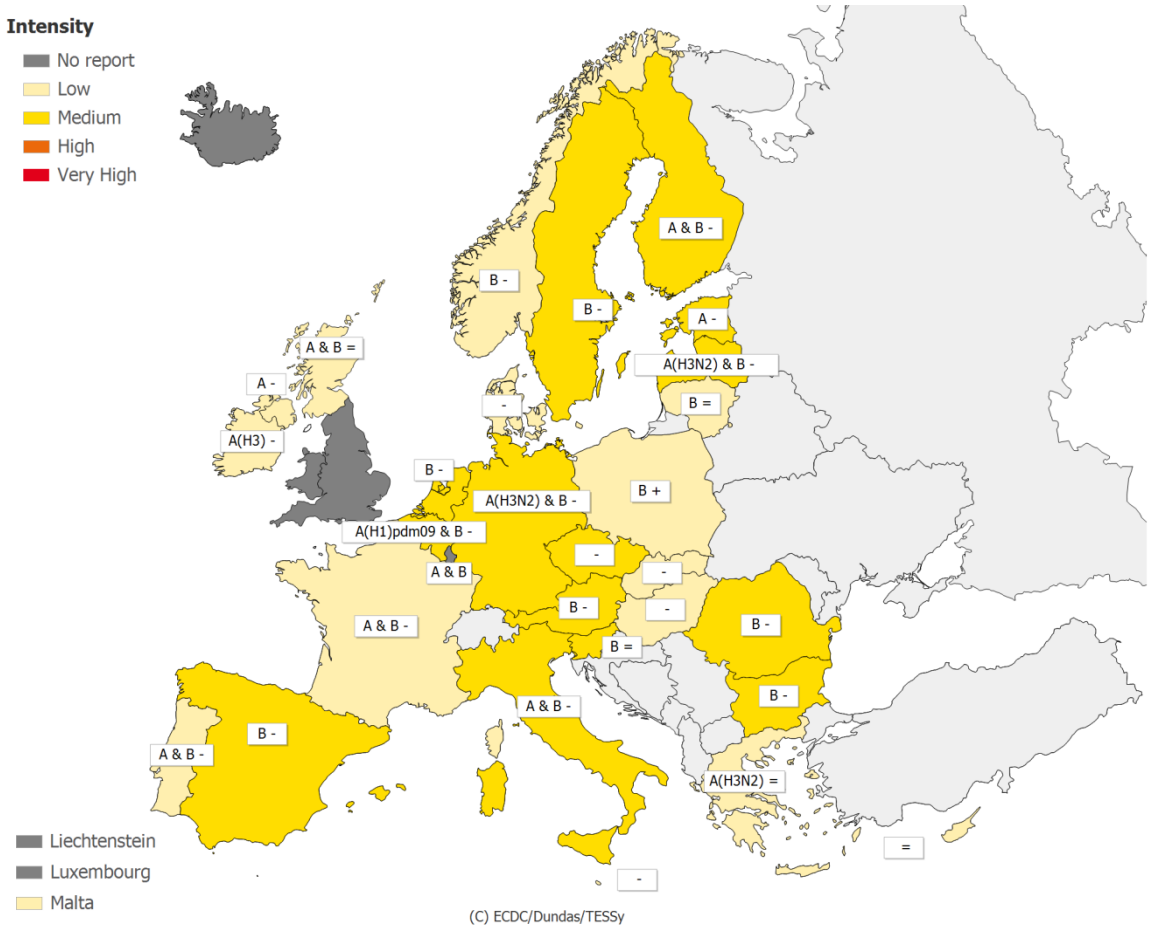
Twelve countries reported medium intensity while 13 countries and the UK (Northern Ireland and Wales) reported low intensity. No country reported high intensity (Table 1, Map 1).

The geographic pattern of influenza activity was reported as widespread by nine countries, seven of which reported medium intensity. Regional, local or sporadic activity was reported by 14 countries and the UK (Northern Ireland and Wales). Only Cyprus and Poland reported no activity (Table 1, Map 2).

Decreasing or stable trends were reported by all reporting countries except Poland which reported an increasing trend but low influenza activity (Table 1, Map 2).

ILI/ARI rates in all reporting countries peaked between weeks 52/2012 and 8/2013 and were declining or already at baseline levels during week 12/2013. Romania experienced a decreasing trend with widespread activity, following an apparent peak in week 11/2013.

Map 1. Intensity for week 12/2013



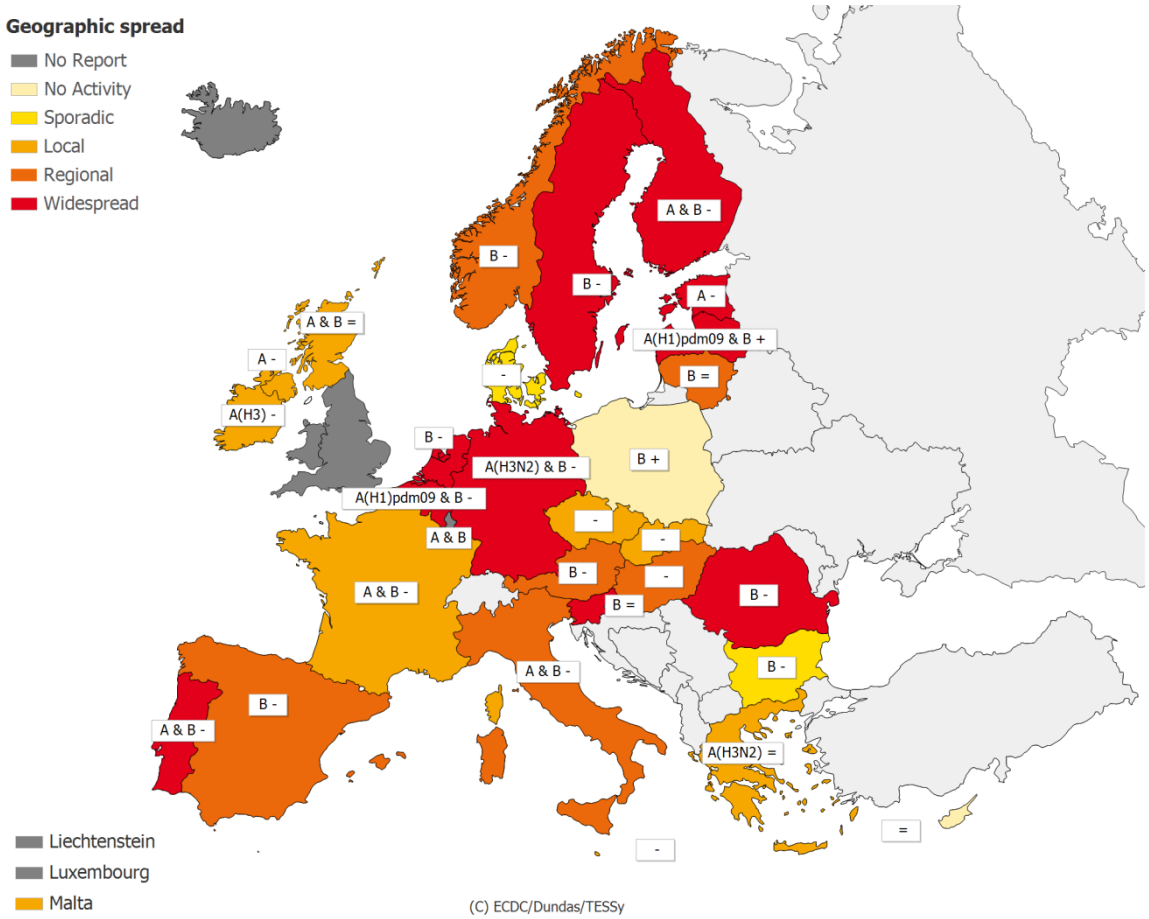
* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

Legend:

No report	Intensity level was not reported
Low	No influenza activity or influenza at baseline levels
Medium	Usual levels of influenza activity
High	Higher than usual levels of influenza activity
Very high	Particularly severe levels of influenza activity

+	Increasing clinical activity
-	Decreasing clinical activity
=	Stable clinical activity
A	Type A
A & B	Type A and B
A(H1)pdm09 & B	Type B and Type A, Subtype (H1)pdm09
A(H3)	Type A, Subtype H3
A(H3N2)	Type A, Subtype H3N2
A(H3N2) & B	Type B and Type A, Subtype H3N2
B	Type B

Map 2. Geographic spread for week 12/2013



* 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 & B	Type A and B
A(H1)pdm09 & B	Type B and Type A, Subtype (H1)pdm09
A(H3)	Type A, Subtype H3
A(H3N2)	Type A, Subtype H3N2
A(H3N2) & B	Type B and Type A, Subtype H3N2
B	Type B

Table 1. Epidemiological and virological overview by country, week 12/2013

Country	Intensity	Geographic spread	Trend	No. of sentinel specimens	Dominant type	Percentage positive	ILI per 100 000	ARI per 100 000	Epidemio-logical overview	Virological overview
Austria	Medium	Regional	Decreasing	21	B	66.7	1083.0	-	Graphs	Graphs
Belgium	Medium	Widespread	Decreasing	21	A(H1)pdm09 & B	100.0	-	-	Graphs	Graphs
Bulgaria	Medium	Sporadic	Decreasing	0	B	0.0	-	1001.4	Graphs	Graphs
Cyprus	Low	No activity	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic	Medium	Local	Decreasing	-	-	0.0	79.2	1065.2	Graphs	Graphs
Denmark	Low	Sporadic	Decreasing	-	-	0.0	-	-		
Estonia	Medium	Widespread	Decreasing	13	A	38.5	18.4	472.0	Graphs	Graphs
Finland	Medium	Widespread	Decreasing	13	A & B	38.5	-	-	Graphs	Graphs
France	Low	Local	Decreasing	105	A & B	41.0	-	1357.0	Graphs	Graphs
Germany	Medium	Widespread	Decreasing	171	A(H3N2) & B	47.4	-	1472.4	Graphs	Graphs
Greece	Low	Local	Stable	16	A(H3N2)	31.3	170.2	-	Graphs	Graphs
Hungary	Low	Regional	Decreasing	-	-	0.0	136.1	-	Graphs	Graphs
Iceland				-	-	0.0	-	-		
Ireland	Low	Local	Decreasing	17	A(H3)	41.2	19.7	-	Graphs	Graphs
Italy	Medium	Regional	Decreasing	41	-	0.0	-	-		
Latvia				3	A(H1)pdm09 & B	66.7	-	-	Graphs	Graphs
Lithuania	Low	Regional	Stable	19	B	78.9	46.4	777.6	Graphs	Graphs
Luxembourg				26	A & B	42.3	-*	-*	Graphs	Graphs
Malta	Low	Local	Decreasing	-	-	0.0	-*	-*	Graphs	Graphs
Netherlands	Low	Widespread	Decreasing	23	B	60.9	49.2	-	Graphs	Graphs
Norway	Low	Regional	Decreasing	0	B	0.0	-	-	Graphs	Graphs
Poland	Low	No activity	Increasing	41	B	9.8	283.1	-	Graphs	Graphs
Portugal	Low	Widespread	Decreasing	0	A & B	0.0	22.5	-	Graphs	Graphs
Romania	Medium	Widespread	Decreasing	24	B	25.0	5.2	831.4	Graphs	Graphs
Slovakia	Low	Local	Decreasing	20	None	65.0	235.2	1687.2	Graphs	Graphs
Slovenia	Medium	Widespread	Stable	25	B	64.0	-	-	Graphs	Graphs
Spain	Medium	Regional	Decreasing	169	B	42.6	88.9	-	Graphs	Graphs
Sweden	Medium	Widespread	Decreasing	22	-	0.0	-	-		
UK - England				-	-	0.0	-	-		
UK - Northern Ireland	Low	Local	Decreasing	6	A	33.3	32.1	413.3	Graphs	Graphs
UK - Scotland	Low	Local	Stable	30	A & B	46.7	18.1	481.2	Graphs	Graphs
UK - Wales				-	-	0.0	-	-		
Europe				**826**		**45.4**				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 ILI, 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

For week 12/2013, 19 countries and the UK (Northern Ireland and Wales) reported testing 826 sentinel specimens, of which 375 (45%) were positive for influenza virus. Since the peak of 61% positive specimens in week 5/2013, the proportion has decreased over seven weeks reflecting the slow decline in influenza activity which has remained high. Of the 375 viruses detected, 111 (30%) were type A and 264 (70%) type B (Tables 1–2, Figure 1).

In addition, 1 604 non-sentinel source specimens (e.g. specimens collected for diagnostic purposes in hospitals) were found to be positive for influenza virus, of which 747 (47%) were type A and 857 (53%) type B (Table 2). Of 319 influenza A viruses subtyped, 206 (65%) were A(H1N1)pdm09 and 113 (35%) A(H3).

Of the 14 148 influenza virus detections in sentinel specimens since week 40/2012, 6 700 (47%) were type A and 7 448 (53%) type B viruses. Of 5 952 influenza A viruses subtyped, 3 778 (63%) were A(H1)pdm09 and 2 174 (37%) A(H3) (Table 2, Figure 2). Of the 2 618 type B viruses for which lineage was determined, 2 373 (91%) were B/Yamagata/16/88-lineage and 245 (9%) B/Victoria/2/87-lineage (Table 2).

Of the 1 781 antigenic characterisations of influenza A viruses reported for sentinel and non-sentinel specimens since week 40/2012, the majority (66%) have been characterised as A/Victoria/361/2011(H3N2)-like. Of the 1 805 antigenic characterisations of influenza B viruses reported, 1 597 (88%) belonged to the B/Yamagata/16/88-lineage and 208 (12%) to the B/Victoria /2/87-lineage. For those of the B/Yamagata/16/88-lineage, 88 (55%) have been characterised as B/Estonia/55669/2011-like and 401 (25%) as B/Wisconsin/1/2010-like (Table 3).

Since week 40/2012, 1 296 genetic characterisations of influenza viruses were reported for sentinel and non-sentinel specimens. Of the 358 A(H1)pdm09 viruses characterised, 262 (73%) fell within genetic group 6 represented by A/St Petersburg/27/2011. All of the 304 A(H3) viruses characterised fell within the A/Victoria/208/2009 clade, with 230 (76%) falling within genetic group 3C, represented by A/Victoria/361/2011 (Table 4).

More details on circulating viruses can be found in the February report prepared by the Community Network of Reference Laboratories (CNRL) coordination team. The viruses circulating this season remain well matched with the vaccine viruses for the 2012–13 season. However, observational studies, such as that made by the I-MOVE consortium, indicate that adjusted vaccine effectiveness is in the range 50–60% (see I-MOVE Report).

A total of 1 028 viruses have been tested for antiviral susceptibility as reported by Denmark, Germany, Greece, the Netherlands, Norway, Portugal, Romania, Spain, Sweden and the UK. Seven A(H1N1)pdm09 viruses tested for neuraminidase inhibitor susceptibility showed the H275Y amino acid substitution associated with highly reduced inhibition by oseltamivir. These specimens were taken from two immunocompromised oseltamivir-treated hospitalised patients in the Netherlands, two hospitalised oseltamivir-treated patients in Germany and one in Denmark, and from two untreated outpatients with no epidemiological link to the UK.

One A(H3N2) virus from Sweden showed the D151N substitution previously associated with reduced inhibition by oseltamivir and zanamivir. No data on immune status or antiviral drug exposure were reported for this patient. One type B virus from an outpatient in the UK not exposed to antivirals showed reduced inhibition by oseltamivir and normal inhibition by zanamivir, associated with the I221T substitution. None of the remaining 447 A(H1N1)pdm09 viruses, 253 A(H3N2) and 307 type B viruses tested for neuraminidase inhibitor susceptibility showed genetic or phenotypic (IC_{50}) evidence for (highly) reduced inhibition.

Forty-seven A(H1N1)pdm09 and 39 A(H3N2) viruses screened for M2-blocker susceptibility carried the S31N amino acid substitution in the M2 protein associated with M2-blocker resistance.

For week 12/2013, 17 countries reported 500 respiratory syncytial virus detections, continuing the decline observed since week 52/2012 towards the baseline level (Figure 4).

Table 2. Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2012–12/2013

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	111	747	6700	30803
A(H1)pdm09	54	206	3778	11493
A(H3)	34	113	2174	4265
A(sub-type unknown)	23	428	748	15045
Influenza B	264	857	7448	17623
B(Vic) lineage	12	5	245	141
B(Yam) lineage	99	38	2373	1678
Unknown lineage	153	814	4830	15804
Total influenza	**375**	**1604**	**14148**	**48426**

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

Figure 1. Proportion of sentinel specimens positive for influenza virus, weeks 40/2012–12/2013

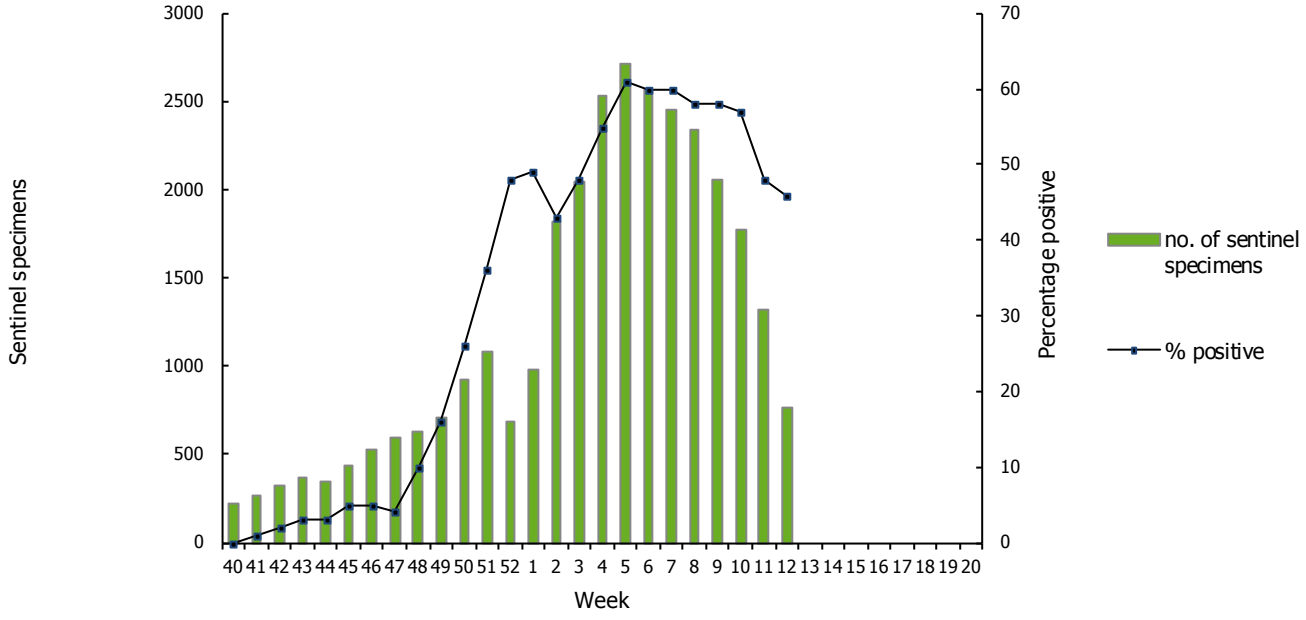


Figure 2. Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40/2012–12/2013

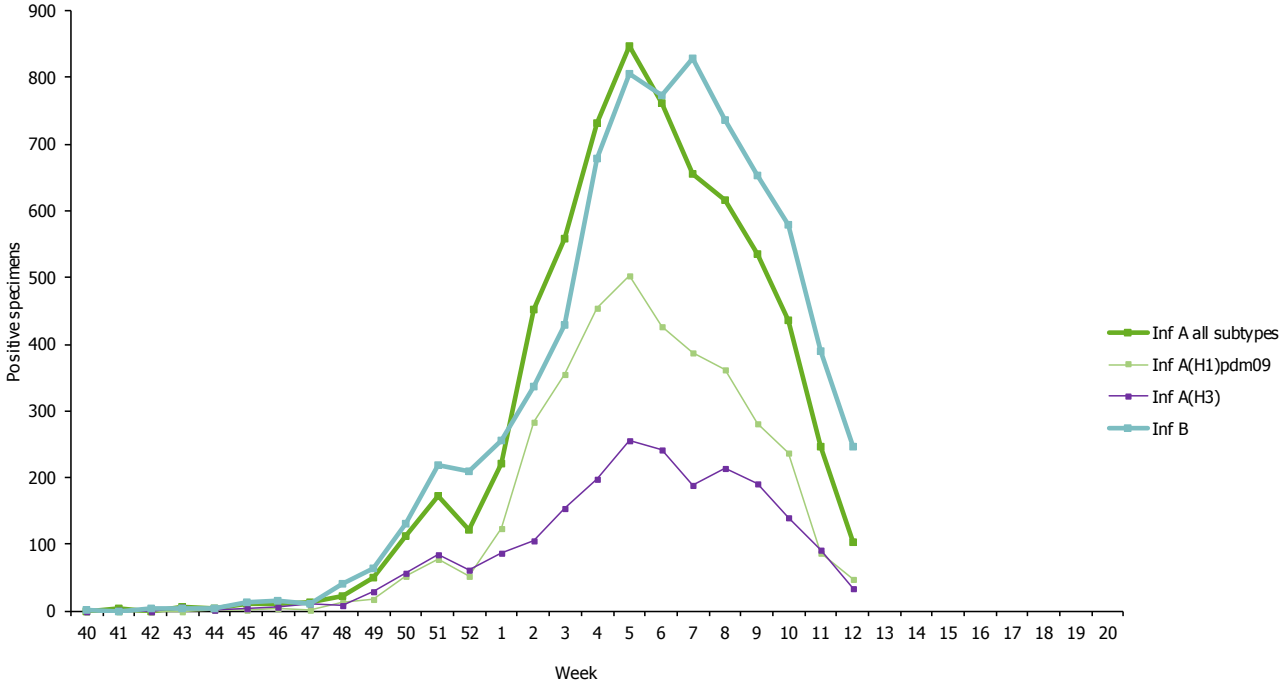


Figure 3. Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2012–12/2013

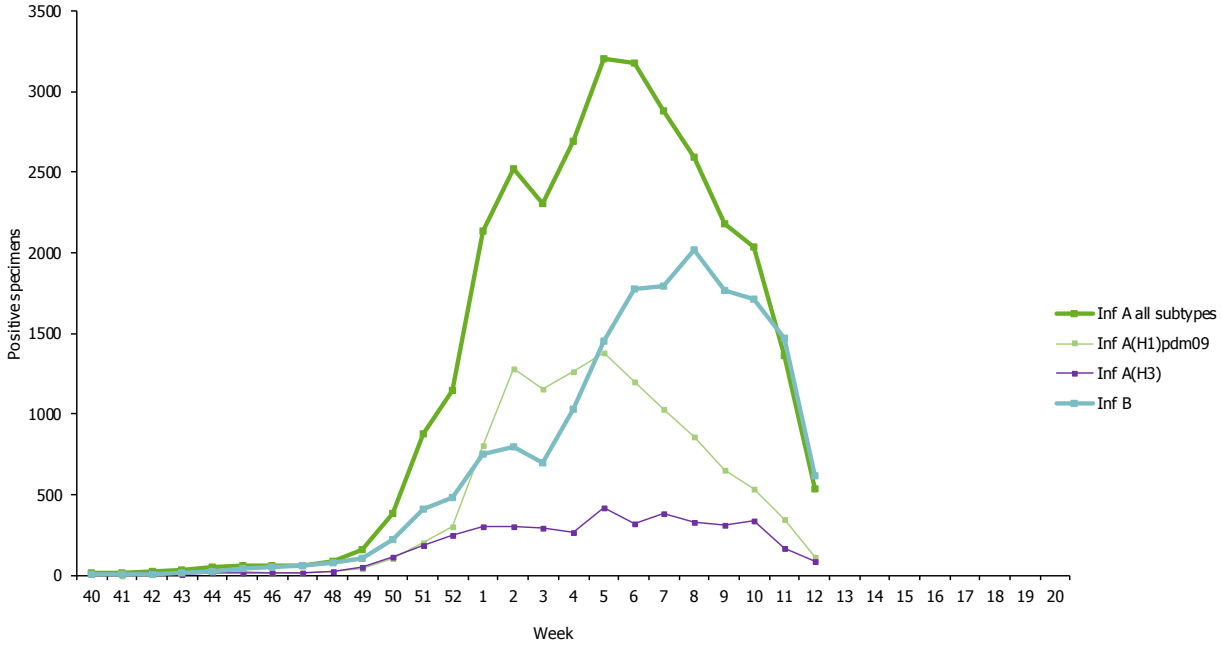


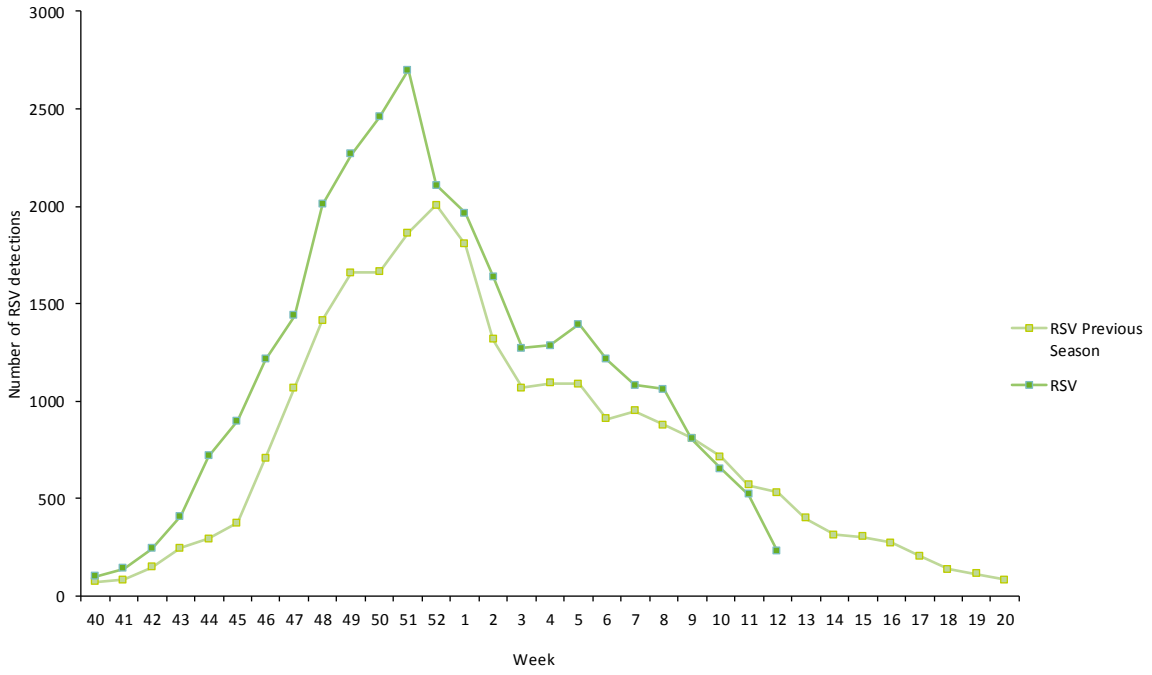
Table 3. Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–12/2013

Antigenic group	Number of viruses
A(H1)pdm09 A/California/7/2009 (H1N1)-like	585
A(H1)pdm09 not attributed to category	9
A(H3) A/Perth/16/2009 (H3N2)-like	2
A(H3) A/Victoria/361/2011 (H3N2)-like	1181
A(H3) not attributed to category	4
B/Brisbane/60/2008-like (B/Victoria/2/87 lineage)	205
B(Vic) lineage not attributed to category	3
B/Estonia/55669/2011-like (B/Yamagata/16/88-lineage)	884
B/Florida/4/2006-like (B/Yamagata/16/88 lineage)	15
B/Wisconsin/1/2010-like (B/Yamagata/16/88-lineage)	401
B/Bangladesh/3333/2007-like (B/Yamagata/16/88 lineage)	250
B(Yam) lineage not attributed to category	47

Table 4. Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–12/2013

Phylogenetic group	Number of viruses
A(H1)pdm09 clade repr. A/California/7/2009	13
A(H1)pdm09 group 6 representative A/St Petersburg/27/2011	262
A(H1)pdm09 group 7 representative A/St Petersburg/100/2011	76
A(H1)pdm09 not attributed to clade/group	7
A(H3) clade repr. A/Victoria/208/2009	53
A(H3) clade repr. A/Victoria/208/2009 – A/Alabama/05/2010 group 5	20
A(H3) clade repr. A/Victoria/208/2009 – A/Stockholm/18/2011 group 3A	1
A(H3) clade repr. A/Victoria/208/2009 – A/Victoria/361/2011 group 3C	230
B(Vic) lineage - clade representative B/Brisbane/60/2008	112
B(Yam) lineage - clade repr. B/Bangladesh/3333/2007	213
B(Yam)-lineage clade repr. B/Wisconsin/1/2010	116
B(Yam)-lineage clade repr. B/Estonia/55669/2011	186
B(Yam)-lineage clade representative B/Brisbane/3/2007	7

Figure 4. Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2012–12/2013



Description of the system

According to the nationally defined sampling strategy, sentinel physicians take nasal or pharyngeal swabs from patients with ILI, 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 of the current virus strains recommended by WHO for vaccine preparation click here.

Hospital surveillance – severe influenza disease

Weekly analysis of hospitalised laboratory-confirmed influenza cases

For week 12/2013, 24 hospitalised laboratory-confirmed influenza cases were reported by France, Romania, Spain and Sweden. Sixteen (67%) cases tested positive for influenza A virus and eight (33%) for influenza B virus (Table 5).

Of the 2 700 hospitalised laboratory-confirmed influenza cases reported since week 40/2012, 1 572 (58%) were related to influenza type A and 1 128 (42%) to type B. Of 925 subtyped influenza viruses, 648 (70%) were A(H1)pdm09 and 277 (30%) A(H3) (Table 5).

Since week 40/2013, 2 700 hospitalised laboratory-confirmed influenza cases, including 177 fatalities, have been reported by eight countries (Table 6). Of 118 fatal cases with known vaccination status, 16 (14%) had received the seasonal influenza vaccine.

Table 5. Number of hospitalised laboratory-confirmed influenza cases by influenza type and subtype, week 12/2013 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	16	1572
A(H1)pdm09	7	648
A(H3)		277
A(sub-typing not performed)	9	647
Influenza B	8	1128
Total	**24**	**2700**

Table 6. Cumulative number of hospitalised laboratory-confirmed influenza cases, weeks 40/2012–12/2013

Country	Number of cases	Incidence of cases per 100 000 population	Number of fatal cases reported	Incidence of fatal cases per 100 000 population	Estimated population covered
Belgium	348		7		
France	700		111		
Ireland	302		2		
Romania	94	1.62	17	0.29	5 813 728
Slovakia	45	0.85	4	0.07	5 408 148
Spain	365		30		
Sweden	107		6		
United Kingdom	739	1.25			59 255 495
Total	**2 700**		**177**		

This report was written by an editorial team at the European Centre for Disease Prevention and Control (ECDC): Eeva Broberg, 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), Vincent Enouf (Institut Pasteur, France) and Anne Mazick (Statens Serum Institut, Copenhagen). 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.