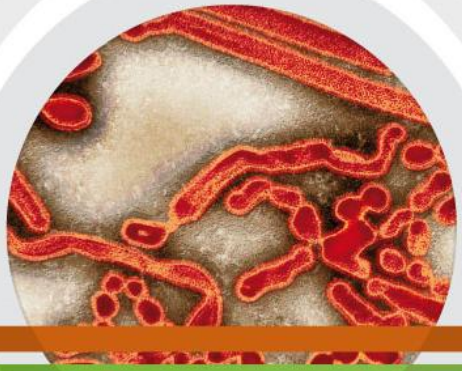


SURVEILLANCE REPORT

Weekly influenza surveillance overview

28 December 2012

Main surveillance developments in week 51/2012 (17–23 December 2012)

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 influenza surveillance in Europe for the 2012–2013 season started in week 40/2012; in week 49, ECDC announced that the period of influenza transmission had started. In weeks 51 and 52, surveillance data in Europe are subject to particular delays and under-reporting because of the holiday season over Christmas and the New Year.

- During week 51/2012, of the 17 countries reporting clinical data, two countries experienced medium intensity influenza activity, three countries reported geographically widespread influenza activity, and five additional countries reported increasing trends.
- The proportion of sentinel specimens positive for influenza continued to increase (27.3%), compared with 17.3% in week 50. Seventy per cent of influenza viruses were type A and 30% were type B. So far the detected viruses remain well-matched to the vaccine strain.
- Since week 40/2012, 10 hospitalised severe influenza cases have been reported by five countries. Sixty per cent of these infections were due to influenza A viruses.

Despite surveillance limitations over the holiday period, there are clear indications that influenza transmission continues to rise in Europe, affecting a higher proportion of countries in week 51 compared with week 50, although the impact and characteristics of the epidemics are yet to be determined.

Sentinel surveillance of influenza-like illness (ILI)/acute respiratory infection (ARI): Two countries reported medium intensity influenza activity, three countries reported geographically widespread influenza activity, and five other countries reported increasing trends. For more information, click here.

Virological surveillance: Seventeen countries reported virological data. Sentinel physicians collected 535 specimens, 146 (27.3%) of which tested positive for influenza virus. For more information, click here.

Hospital surveillance of laboratory-confirmed influenza cases: Since week 40/2012, 10 hospitalised severe influenza cases have been reported by five countries. Influenza A virus was detected in six patients and B virus in four. For more information, click here.

Sentinel surveillance (ILI/ARI)

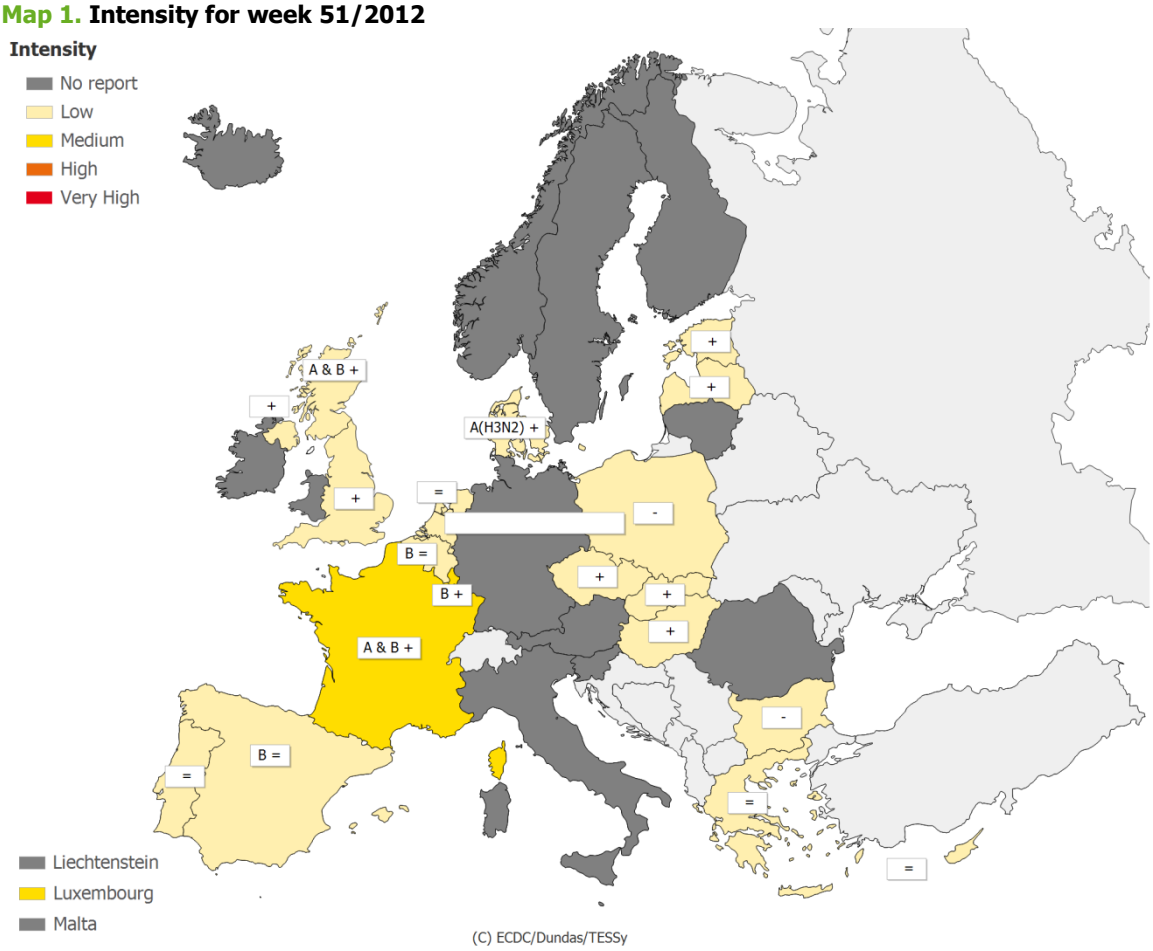
Weekly analysis – epidemiology

During week 51/2012, 17 countries reported clinical data. Low intensity was experienced by all but France and Luxembourg, which reported medium intensity influenza activity (Table 1, Map 1).

The geographic spread of influenza activity was reported as widespread by Denmark, the Netherlands and the UK (England), regional by France, local by the Czech Republic and the UK (Scotland), sporadic by Belgium, Estonia, Hungary, Latvia, Luxembourg, Spain and the UK (Northern Ireland), while the six remaining countries reported no activity (Table 1, Map 2).

Stable or decreasing trends in clinical activity were reported by eight countries, while increasing trends were reported by nine countries: the Czech Republic, Denmark, Estonia, France, Hungary, Latvia, Luxembourg, Slovakia and the UK (Table 1, Map 2).

Map 1. Intensity for week 51/2012

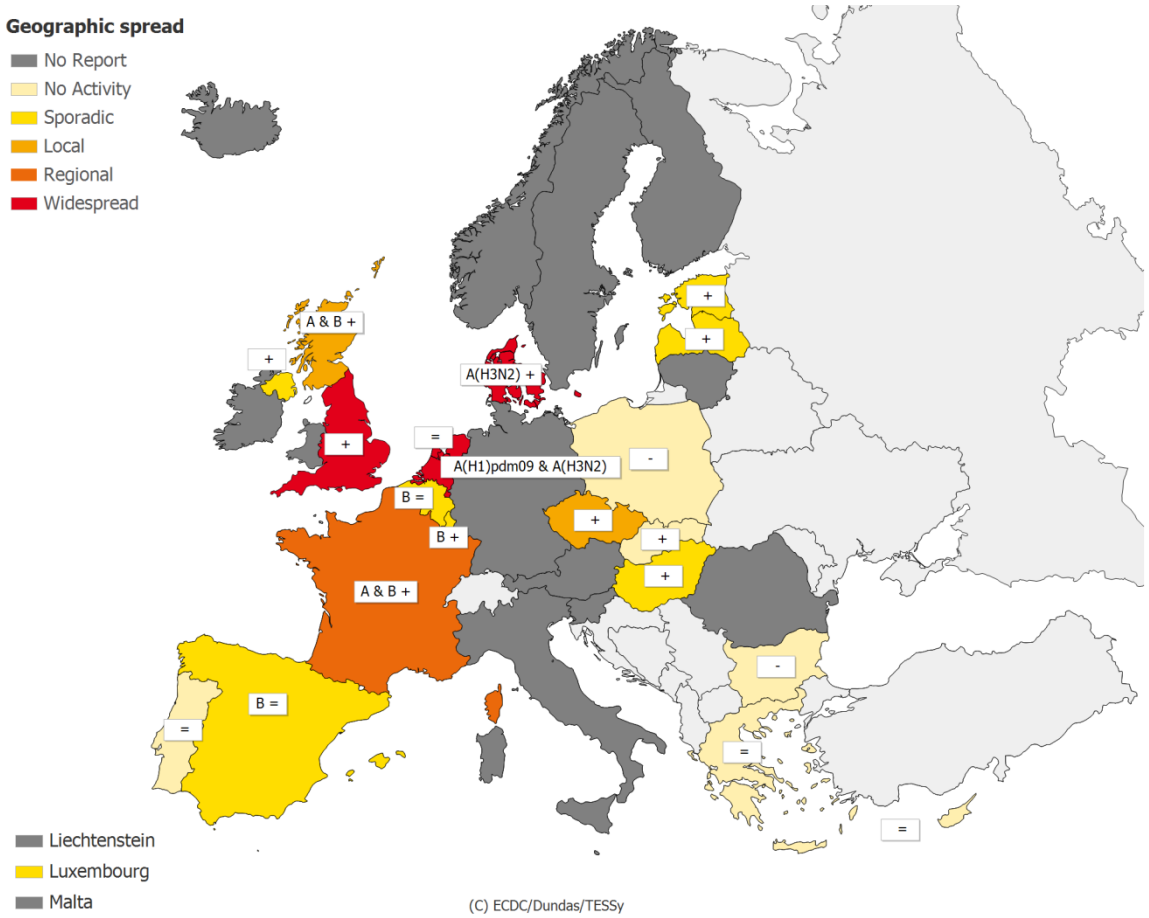


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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 & B**	Type A and B
Very high	Particularly severe levels of influenza activity	**A(H1)pdm09 & A(H3N2)**	Type A, Subtype (H1)pdm09 and H3N2
		A(H3N2)	Type A, Subtype H3N2
		B	Type B

Map 2. Geographic spread for week 51/2012



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

Table 1. Epidemiological and virological overview by country, week 51/2012

Country	Intensity	Geographic spread	Trend	No. of sentinel specimens	Dominant type	Per-centage positive	ILI per 100 000	ARI per 100 000	Epi-demiological overview	Virological overview
Austria				17	None	23.5	-	-	Graphs	Graphs
Belgium	Low	Sporadic	Stable	21	B	33.3	159.5	1993.0	Graphs	Graphs
Bulgaria	Low	No activity	Decreasing	57	None	0.0	-	727.0	Graphs	Graphs
Cyprus	Low	No activity	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic	Low	Local	Increasing	21	None	33.3	53.9	1107.3	Graphs	Graphs
Denmark	Low	Widespread	Increasing	2	A(H3N2)	100.0	36.4	-	Graphs	Graphs
Estonia	Low	Sporadic	Increasing	-	-	0.0	8.1	265.7	Graphs	Graphs
Finland				-	-	0.0	-	-		
France	Medium	Regional	Increasing	105	A & B	45.7	-	2528.8	Graphs	Graphs
Germany				87	A(H1)pdm09 & A(H3N2)	28.7	-	-	Graphs	Graphs
Greece	Low	No activity	Stable	0	None	0.0	34.7	-	Graphs	Graphs
Hungary	Low	Sporadic	Increasing	12	None	8.3	56.6	-	Graphs	Graphs
Iceland				-	-	0.0	-	-		
Ireland				-	-	0.0	-	-		
Italy				-	-	0.0	-	-		
Latvia	Low	Sporadic	Increasing	0	None	0.0	3.9	1003.9	Graphs	Graphs
Lithuania				1	None	0.0	-	-	Graphs	Graphs
Luxembourg	Medium	Sporadic	Increasing	30	B	56.7	-*	-*	Graphs	Graphs
Malta				-	-	0.0	-	-		
Netherlands	Low	Widespread	Stable	-	-	0.0	43.8	-	Graphs	Graphs
Norway				2	None	100.0	-	-	Graphs	Graphs
Poland	Low	No activity	Decreasing	48	None	22.9	104.3	-	Graphs	Graphs
Portugal	Low	No activity	Stable	2	None	0.0	25.7	-	Graphs	Graphs
Romania				-	-	0.0	-	-		
Slovakia	Low	No activity	Increasing	-	-	0.0	163.5	1649.9	Graphs	Graphs
Slovenia				16	None	0.0	-	-	Graphs	Graphs
Spain	Low	Sporadic	Stable	51	B	13.7	23.4	-	Graphs	Graphs
Sweden				-	-	0.0	-	-		
UK - England	Low	Widespread	Increasing	-	-	0.0	27.4	525.6	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Increasing	-	-	0.0	25.5	629.4	Graphs	Graphs
UK - Scotland	Low	Local	Increasing	63	A & B	23.8	19.7	715.4	Graphs	Graphs
UK - Wales				-	-	0.0	-	-		
Europe				535		27.3				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

In week 51/2012, 17 countries and the UK (Scotland) reported virological data. Of 535 sentinel specimens tested, 146 (27.3%) were positive for influenza virus (Tables 1–2, Figure 1). This proportion has increased over four consecutive weeks despite the under-reporting during the Christmas holiday period.

In addition, 447 non-sentinel source specimens (e.g. specimens collected for diagnostic purposes in hospitals) were found to be positive for influenza virus (Table 2).

Of the 593 influenza viruses detected from sentinel and non-sentinel sources during week 51/2012, 426 (71.8%) were type A and 167(28.2%) were type B. Of the 161 influenza A viruses subtyped, 50 (31.1%) were A(H1)pdm09 and 111 (68.9%) were A(H3). Of 167 influenza B viruses detected, five were characterised further: four were of B-Yamagata lineage and one was of B-Victoria lineage (Table 2, Figures 2 and 3).

Of the 603 influenza virus detections in sentinel specimens since week 40/2012, 307 (50.9%) were type A, and 296 (49.1%) were type B viruses. Of 261 influenza A viruses subtyped, 156 (59.8%) were A(H3) and 105 (40.2%) were A(H1)pdm09 (Table 2, Figure 2).

Of the 1 816 influenza viruses detected from non-sentinel sources since week 40/2012, 1 174 (64.6%) were type A, and 642 (35.4%) were type B. Of 581 type A viruses subtyped, 250 (43.0%) were A(H1)pdm09 and 331 (57.0%) A(H3). The lineage of 132 (92.3%) type B viruses was Yamagata and 11 (7.7%) were Victoria (Table 2, Figure 3).

Since week 40/2012, 57 antigenic characterisations of influenza viruses have been reported. Thirty-four have been characterised as A/Victoria/361/2011, two as A(H1)pdm09 A/California /7/2009-like, two as A(H1)pdm09 not attributed to any category, and one A(H3) not attributed to any category. Eleven were characterised as B/Wisconsin/1/2010-like (Yamagata lineage) and seven as B/Brisbane/60/2008-like (B/Victoria /2/87 lineage) (Table 3).

Since week 40/2012, 91 genetic characterisations of influenza viruses have been reported for sentinel and non-sentinel specimens: 19 A(H1)pdm09 viruses belonged to two genetic groups, 37 A(H3) to three groups, eight B (Victoria lineage) to one group, and 27 B (Yamagata lineage) viruses to two genetic groups. Most of the viruses fell either into the A/Victoria/361/2011 (H3N2) group 3C or the (Yamagata lineage) clade representative B/Estonia/55669/2011 group (Table 4).

More details on circulating viruses can be found in the November report prepared by the Community Network of Reference Laboratories (CNRL) coordination team. The viruses circulating this season remain well-matched to the 2012/13 season vaccine viruses.

During week 51/2012, there was no report on any antiviral susceptibility testing. Since week 40/2012, a total of 60 viruses have been tested for antiviral susceptibility as reported by seven EU/EEA countries: Denmark, Germany, the Netherlands, Norway, Spain, Sweden and the UK. None of the 27 A(H1N1)pdm09, 26 A(H3N2) and seven B viruses tested for susceptibility to neuraminidase inhibitors showed genetic (markers) or phenotypic (IC_{50}) evidence for (highly) reduced inhibition. Five A(H1N1)pdm09 and 14 A(H3N2) viruses screened for M2-blocker susceptibility carried the S31N amino acid substitution in the M2 protein associated with M2-blocker resistance.

During week 51/2012, 10 countries reported 780 respiratory syncytial virus detections, which is substantially less compared to the two previous weeks (Figure 4). It is too early to speculate whether this dramatic drop might be due to either under-reporting during the holidays or represents a decline in respiratory syncytial virus (RSV) outbreaks, or a combination of both.

Table 2. Weekly and cumulative influenza virus detections by type, sub-type and surveillance system, weeks 40–51/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	86	340	307	1174
A(H1)pdm09	26	24	105	250
A(H3)	39	72	156	331
A(sub-type unknown)	21	244	46	593
Influenza B	60	107	296	642
B(Vic) lineage	1	0	8	11
B(Yam) lineage	4	0	40	132
Unknown lineage	55	107	248	499
Total influenza	**146**	**447**	**603**	**1816**

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 40–51/2012

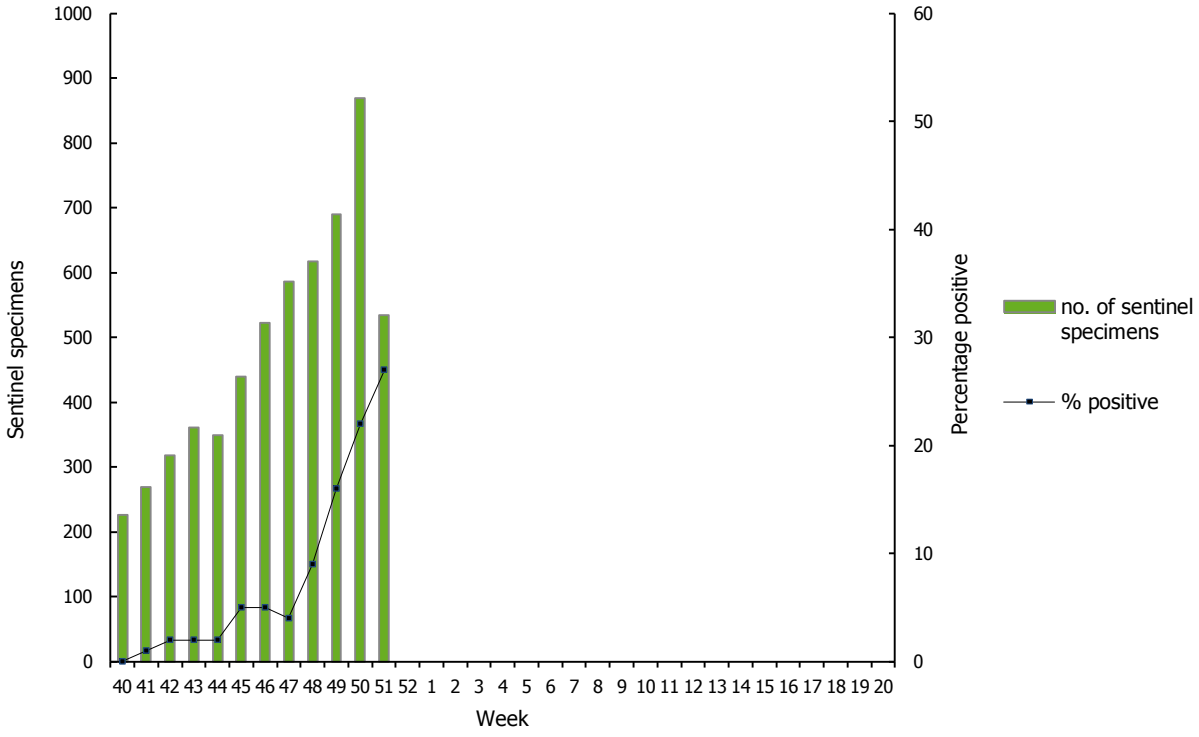


Figure 2. Number of sentinel specimens positive for influenza virus, by type, sub-type and by week of report, weeks 40–51/2012

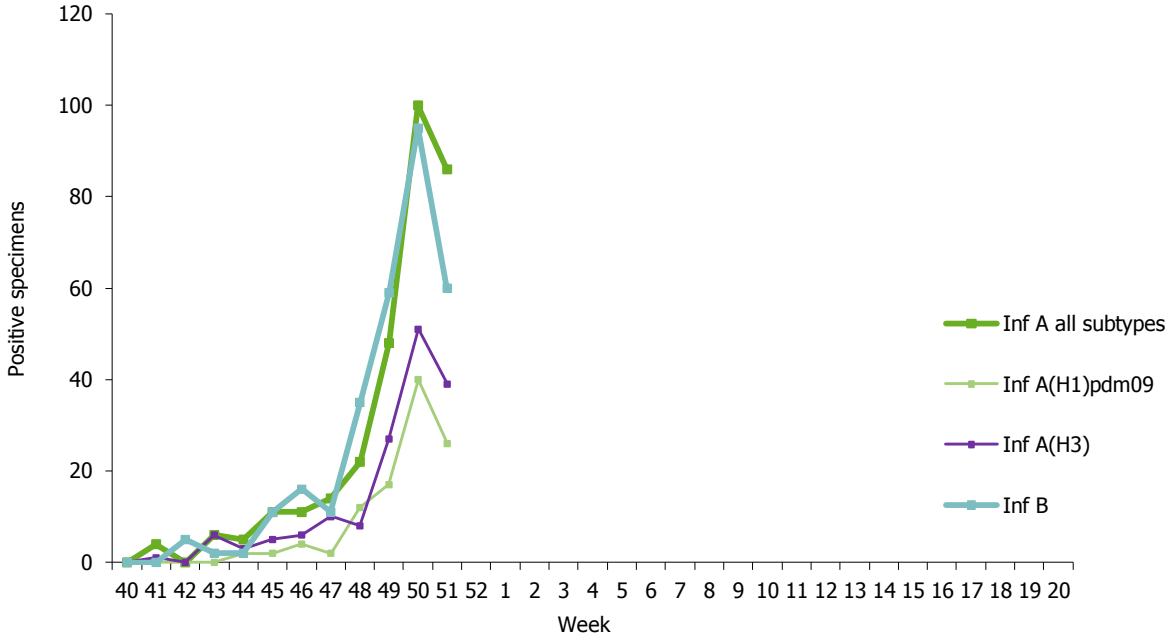


Figure 3. Number of non-sentinel specimens positive for influenza virus by type, sub-type and week of report, weeks 40–51/2012

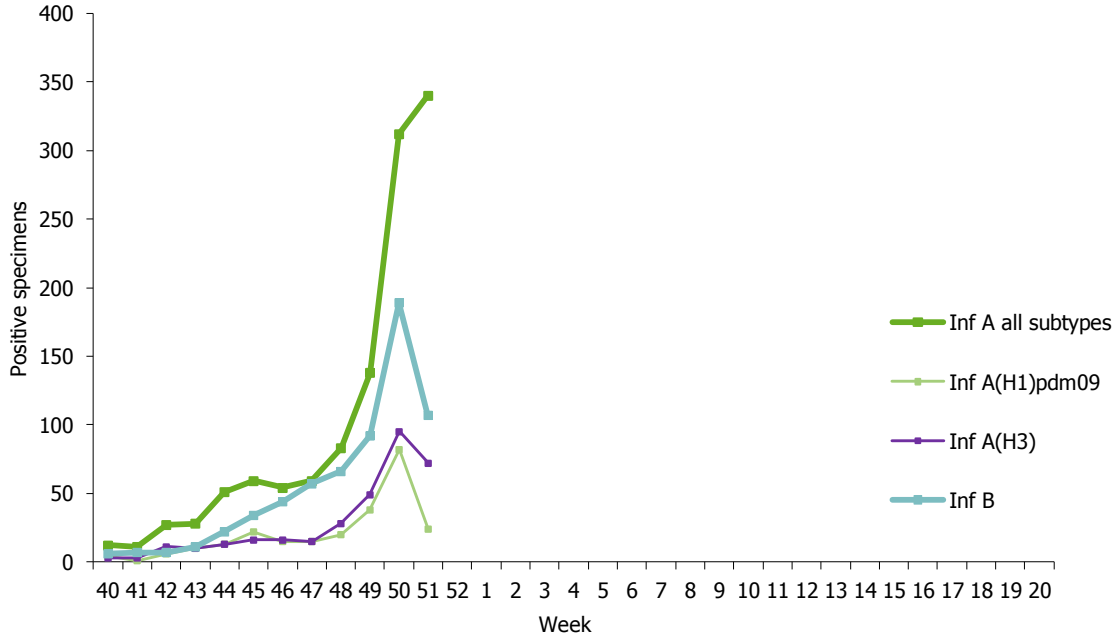


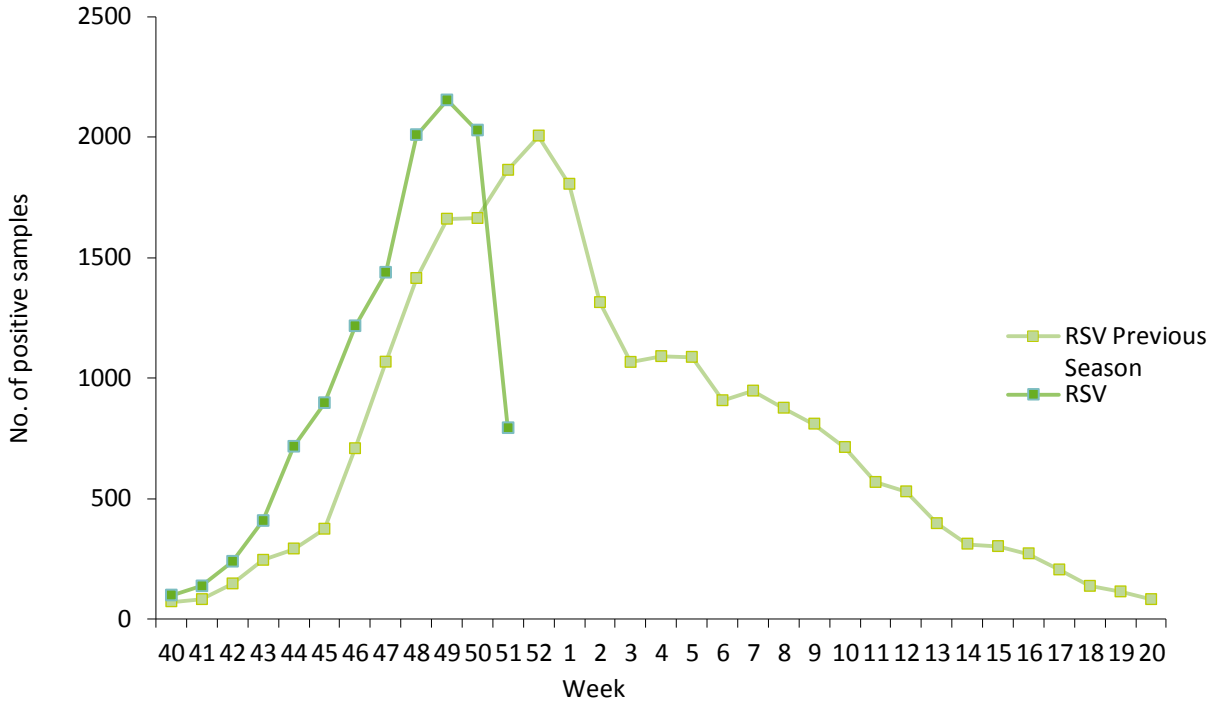
Table 3. Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40–51/2012

Antigenic group	Number of viruses
A(H1)pdm09 A/California/7/2009 (H1N1)-like	2
A(H1)pdm09 not attributed to category	2
A(H3) A/Victoria/361/2011 (H3N2)-like	34
A(H3) not attributed to category	1
B/Brisbane/60/2008-like (B/Victoria/2/87 lineage)	7
B/Wisconsin/1/2010-like (B/Yamagata/16/88-lineage)	11

Table 4. Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40–51/2012

Phylogenetic group	Number of viruses
A(H1)pdm09 group 6 representative A/St Petersburg/27/2011	11
A(H1)pdm09 group 7 representative A/St Petersburg/100/2011	8
A(H3) clade repr. A/Victoria/208/2009 – A/Alabama/05/2010 group 5	11
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	25
B(Vic) lineage - clade representative B/Brisbane/60/2008	8
B(Yam)-lineage clade repr. B/Wisconsin/1/2010	9
B(Yam)-lineage clade repr. B/Estonia/55669/2011	18

Figure 4. Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40–51/2012



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

In week 51/2012, no hospitalised laboratory-confirmed influenza cases were reported.

Since week 40/2012, ten hospitalised laboratory-confirmed influenza cases have been reported by France, Ireland, Slovakia, Spain and Sweden (Table 5). Four cases involved an influenza B virus, and of the six type A viruses detected in the other patients, two were A(H1)pdm09, two A(H3) and two were not subtyped (Table 6).

Table 5. Cumulative number of hospitalised laboratory-confirmed influenza cases, weeks 40–51/2012

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
France	1				
Ireland	1				
Slovakia	1	0.02			5435273
Spain	6				
Sweden	1				
Total	**10**		**0**		

Table 6. Number of hospitalised laboratory-confirmed influenza cases by influenza type and sub-type, week 51/2012 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A		6
A(H1)pdm09		2
A(H3)		2
A(sub-typing not performed)		2
Influenza B		4
Total		**10**

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.