



SURVEILLANCE REPORT

Weekly influenza surveillance overview

4 January 2013

Main surveillance developments in week 52/2012 (24–30 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. ECDC announced that the period of influenza transmission had started in week 49. In weeks 51 and 52, surveillance data in Europe are subject to particular delays and underreporting because of the holiday season so data should be interpreted with this in mind. In week 52, 20 of a potential 29 countries reported clinical data.

- During week 52/2012, four countries (France, Italy, the Netherlands and Norway) reported medium intensity transmission; geographic spread of influenza activity was reported as widespread by five countries (Belgium, Denmark, France, Norway and the UK (England)); and nine countries reported increasing trends.
- Of 375 specimens from sentinel patients, 25% were positive for influenza virus; a small decrease compared with 27% in the previous week. This may be related to a lower number of physician consultations over the New Year holiday.
- Since week 40/2012, 46% of sentinel specimens were type A and 54% were type B, though the proportion of B viruses has decreased somewhat in recent weeks. Subtyping of type A viruses has shown proportions of 56% A(H3) and 44% A(H1).
- Viruses characterised to date match well with the vaccine viruses.
- Countries undertaking surveillance of laboratory-confirmed severe influenza cases requiring hospitalisation are starting to report increasing numbers of such individuals.

Influenza activity continues to rise in a number of EU/EEA countries, especially in western Europe. Greater numbers of severe laboratory-confirmed cases are now being reported.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Geographic spread of influenza activity was reported as widespread by Belgium, Denmark, France, Norway and the UK (England) and medium intensity clinical activity by France, Italy, the Netherlands and Norway. For more information, [click here](#).

Virological surveillance: Twenty countries reported virological data. Sentinel physicians collected 375 specimens, of which 95 (25.3 %) tested positive for influenza virus. For more information, [click here](#).

Hospital surveillance of influenza laboratory-confirmed cases: Since week 40/2012, 135 hospitalised severe influenza cases were reported by seven countries. For more information, [click here](#).

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

In weeks 51 and 52, surveillance data in Europe are subject to particular delays and underreporting because of the holiday season, so data should be interpreted with this in mind.

Up to 29 countries can report data. During week 52/2012 19 countries reported clinical data. This compared with 17 countries for week 51 ([WISO 51/2012](#)), 22 countries for week 50 ([WISO 50/2012](#)) and 24 countries for week 49 ([WISO 49/2012](#)).

In week 52/2012, four countries (France, Italy, the Netherlands and Norway) reported medium intensity transmission while the other reporting countries reported low-intensity clinical activity (Table 1, Map 1). Previously this season, only France and Luxembourg had reported medium activity, in week 51. No countries had reported medium activity before week 51.

The geographic pattern of influenza activity was reported as widespread by Belgium, Denmark, France, Norway and the UK (England); regional by Italy, the Netherlands and the UK (Scotland), local by the Czech Republic, Germany, Ireland and the UK (Northern Ireland) and sporadic by Estonia, Greece, Lithuania and Spain. The five remaining countries reported no geographic spread (Table 1, Map 2). Previously this season, the only countries reporting widespread transmission were Denmark, the Netherlands and the UK (England), in week 51. No countries reported widespread activity before week 51.

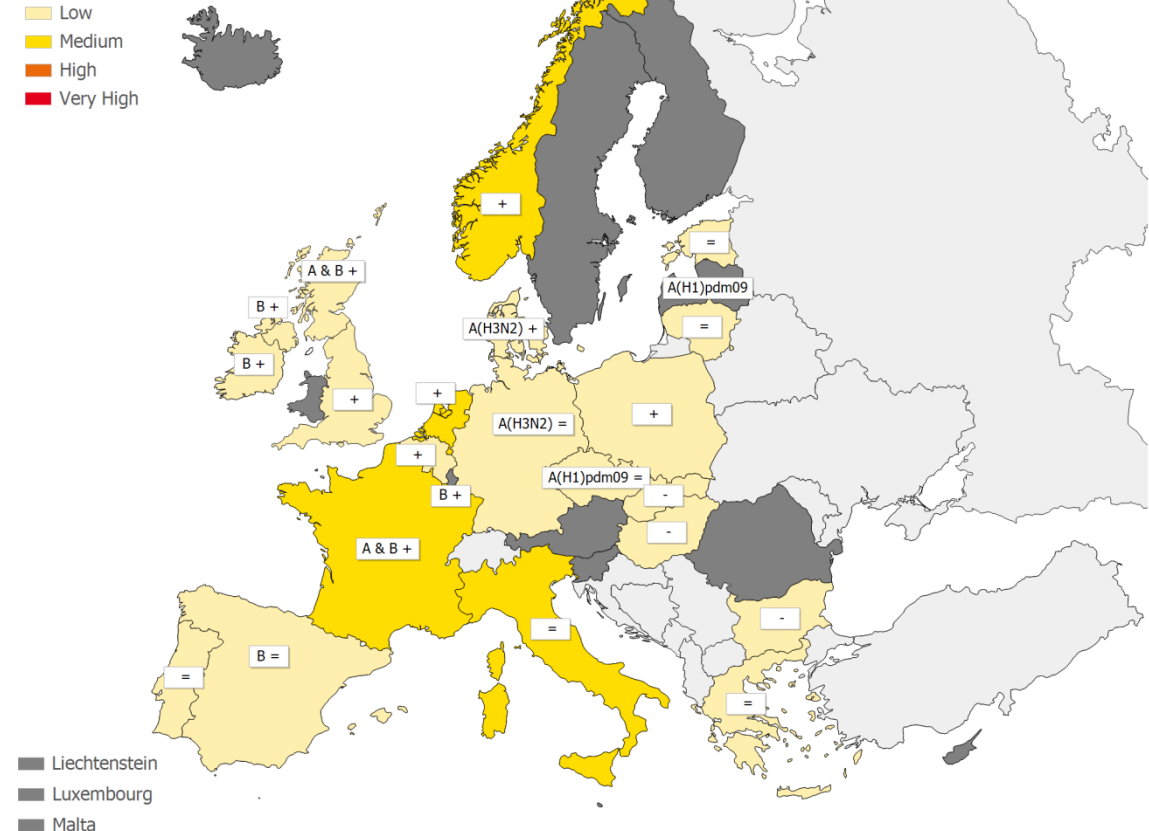
Increasing trends were reported by nine countries: Belgium, Denmark, France, Ireland, Luxembourg, the Netherlands, Norway, Poland and the UK (Table 1, Map 2). For the Netherlands and Norway, it was the first time increasing trends have been reported this season. Stable trends in clinical activity were reported by eight countries and only Bulgaria, Hungary and Slovakia reported decreasing trends.

When combined with the virological information and the hospitalised laboratory-confirmed cases seen in some of the countries under severe influenza surveillance, the clinical data are indicative of accelerating epidemics of seasonal influenza.

Map 1. Intensity for week 52/2012

Intensity

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



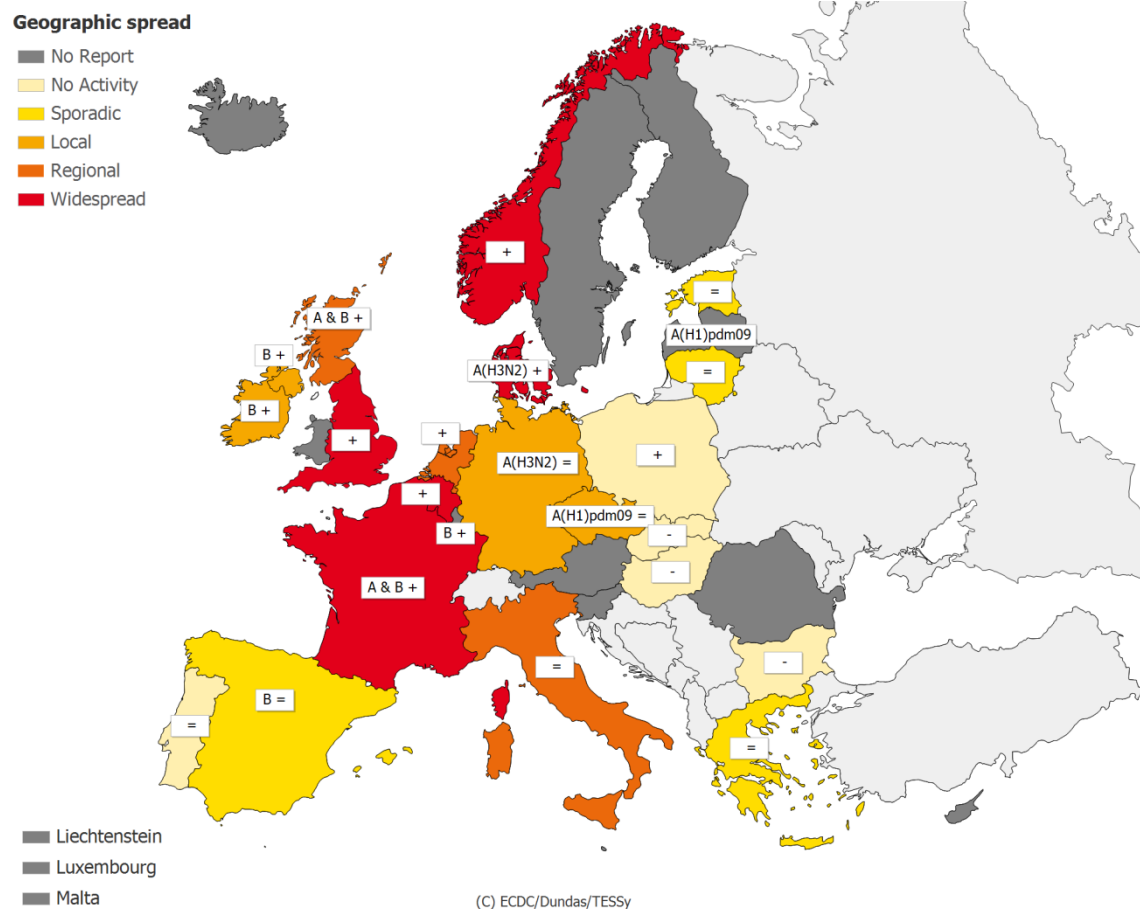
(C) ECDC/Dundas/TESSy

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

Map 2. Geographic spread for week 52/2012



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

Table 1. Epidemiological and virological overview by country, week 52/2012

Country	Intensity	Geographic spread	Trend	No. of sentinel specimens	Dominant type	Percentage positive	ILI per 100 000	ARI per 100 000	Epidemiological overview	Virological overview
Austria				8	None	37.5	-	-	Graphs	Graphs
Belgium	Low	Widespread	Increasing	-	-	0.0	188.4	1955.0	Graphs	Graphs
Bulgaria	Low	No activity	Decreasing	21	None	0.0	-	298.5	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	Local	Stable	0	A(H1)pdm09	0.0	44.6	611.8	Graphs	Graphs
Denmark	Low	Widespread	Increasing	0	A(H3N2)	0.0	20.4	-	Graphs	Graphs
Estonia	Low	Sporadic	Stable	-	-	0.0	6.9	207.5	Graphs	Graphs
Finland				5	None	0.0	-	-	Graphs	Graphs
France	Medium	Widespread	Increasing	105	A & B	55.2	-	2260.2	Graphs	Graphs
Germany	Low	Local	Stable	26	A(H3N2)	42.3	-	670.6	Graphs	Graphs
Greece	Low	Sporadic	Stable	0	None	0.0	35.8	-	Graphs	Graphs
Hungary	Low	No activity	Decreasing	1	-	0.0	24.1	-	Graphs	Graphs
Iceland				-	-	0.0	-	-		
Ireland	Low	Local	Increasing	0	B	0.0	35.7	-	Graphs	Graphs
Italy	Medium	Regional	Stable	0	None	0.0	231.5	-	Graphs	Graphs
Latvia				0	A(H1)pdm09	0.0	-	-	Graphs	Graphs
Lithuania	Low	Sporadic	Stable	1	None	0.0	3.6	709.2	Graphs	Graphs
Luxembourg			Increasing	12	B	16.7			Graphs	Graphs
Malta				-	-	0.0	-	-		
Netherlands	Medium	Regional	Increasing	12	None	50.0	61.4	-	Graphs	Graphs
Norway	Medium	Widespread	Increasing	0	None	0.0	39.1	-	Graphs	Graphs
Poland	Low	No activity	Increasing	15	None	40.0	162.0	-	Graphs	Graphs
Portugal	Low	No activity	Stable	1	None	0.0	0.0	-	Graphs	Graphs
Romania				-	-	0.0	-	-		
Slovakia	Low	No activity	Decreasing	0	None	0.0	81.4	871.9	Graphs	Graphs
Slovenia				5	None	20.0	-	-	Graphs	Graphs
Spain	Low	Sporadic	Stable	17	B	11.8	23.3	-	Graphs	Graphs
Sweden				-	-	0.0	-	-		
UK - England	Low	Widespread	Increasing	136	None	0.0	32.7	428.0	Graphs	Graphs
UK - Northern Ireland	Low	Local	Increasing	6	B	66.7	43.7	465.5	Graphs	Graphs
UK - Scotland	Low	Regional	Increasing	4	A & B	50.0	37.1	989.4	Graphs	Graphs
UK - Wales				-	-	0.0	-	-		
Europe				375		25.3				Graphs

Liechtenstein does not report to the European Influenza Surveillance Network.

Country comments

Greece: The first influenza case of the 2012–2013 season was confirmed on 28 December 2012. A specimen received from a hospitalised 2-year-old male tested positive by real-time PCR for influenza A(H3N2) virus.

Norway: There has been considerable media attention on the cases with A(H1N1)pdm09 in Norway recently following the death of a previously well child.

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 52/2012, 20 countries and Scotland reported virological data. Of 375 sentinel specimens tested, 95 (25.3%) were positive for influenza virus (Tables 1–2, Figure 1). Compared with the previous week (27.3%), the proportion of influenza-positive cases (25.3%) has decreased somewhat. However, the numbers tested have declined significantly from 535 in week 51 to only 375 in week 52, probably due to the holiday season. This makes the decrease difficult to interpret. In addition, 911 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 1 006 influenza viruses detected from sentinel and non-sentinel sources during week 52/2012, 700 (69.6%) were type A and 306 (30.4%) were type B. Of the 244 influenza A viruses subtyped, 138 (56.6%) were A(H1)pdm09 and 106 (43.4%) were A(H3). Of 306 influenza B viruses detected, three were characterised as Yamagata lineage (Table 2, Figures 2 and 3).

Of the 898 influenza virus detections in sentinel specimens since week 40/2012, 414 (46.1%) were type A, and 484 (53.9%) were type B viruses. Of 349 influenza A viruses subtyped, 197 (56.4%) were A(H3) and 152 (43.6%) were A(H1)pdm09 (Table 2, Figure 2). It is notable that this distribution of A viruses is differing from that seen in North America where A(H1N1) viruses are uncommon this season as of week 51 ([see CDC Fluview week 51/2012](#)).

Of the 3 179 influenza viruses detected from non-sentinel sources since week 40/2012, 2 059 (64.8%) were type A, and 1 120 (35.2%) were type B. Of 922 type A viruses subtyped, 455 (49.3%) were A(H1)pdm09 and 467 (50.7%) A(H3). The lineage of 164 (93.2%) type B viruses was Yamagata and 12 (6.8%) were Victoria (Table 2, Figure 3).

Since week 40/2012, 83 antigenic characterisations of influenza viruses have been reported. Fifty-two have been characterised as A(H3)/Victoria/361/2011-like, six 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. Fourteen were characterised as B/Wisconsin/1/2010-like (Yamagata lineage) and eight as B/Brisbane/60/2008-like (Victoria 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) genetic 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.

In terms of antiviral susceptibility, a total of 81 viruses have been tested and reported on by seven European countries: Denmark, Germany, the Netherlands, Norway, Spain, Sweden and the UK. None of the 28 A(H1N1)pdm09, 37 A(H3N2) and 16 B viruses tested for neuraminidase inhibitor susceptibility showed genetic (markers) or phenotypic (IC₅₀) 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.

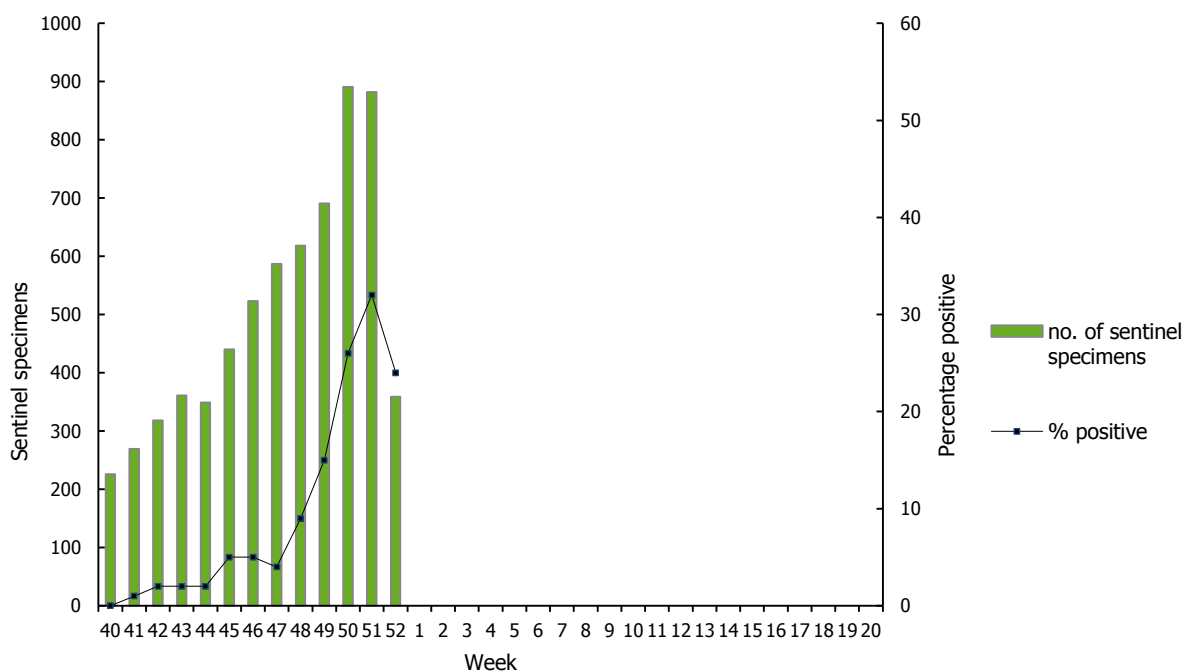
During week 52/2012, 11 countries reported 1 178 respiratory syncytial virus detections, which is substantially fewer than during the two previous weeks (Figure 4). This dramatic drop might be due to either underreporting during the holidays, a true decline in respiratory syncytial virus (RSV) outbreaks, or a combination of both (Figure 3).

Table 2. Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40–52/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	55	645	414	2059
A(H1)pdm09	22	116	152	455
A(H3)	17	89	197	467
A(sub-type unknown)	16	440	65	1137
Influenza B	40	266	484	1120
B(Vic) lineage	0	0	8	12
B(Yam) lineage	1	2	49	164
Unknown lineage	39	264	427	944
Total influenza	95	911	898	3179

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 40–52/2012



Note: The data in the figure before week 52 reflect further updates from Member States and therefore differ somewhat from what is reported in the text.

Figure 2. Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40–52/2012

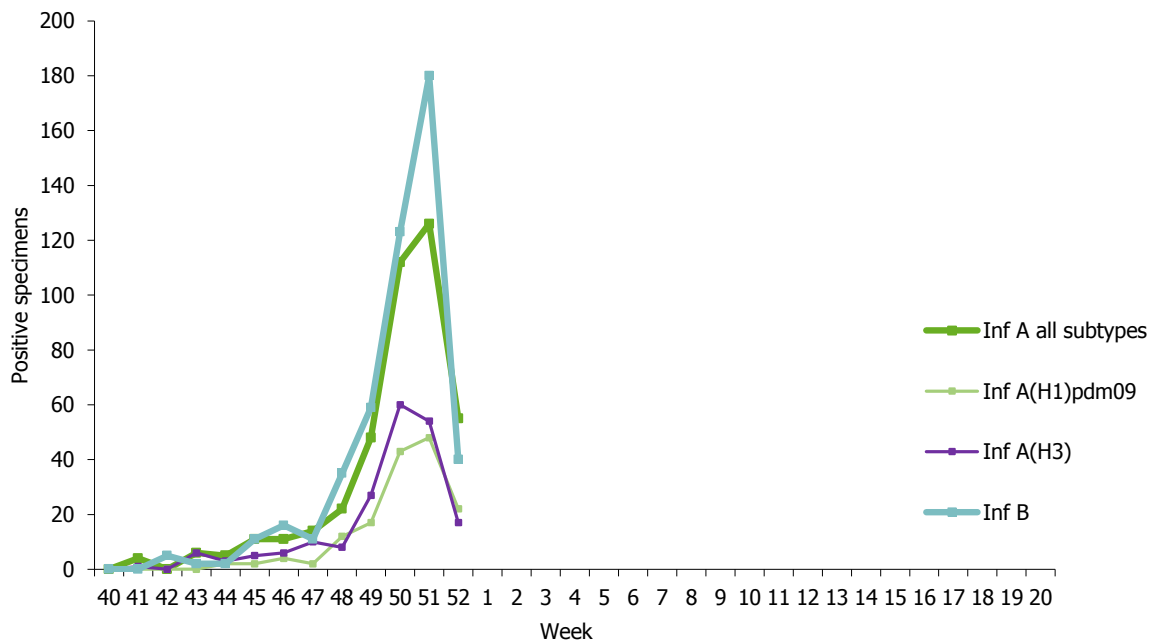


Figure 3. Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40–52/2012

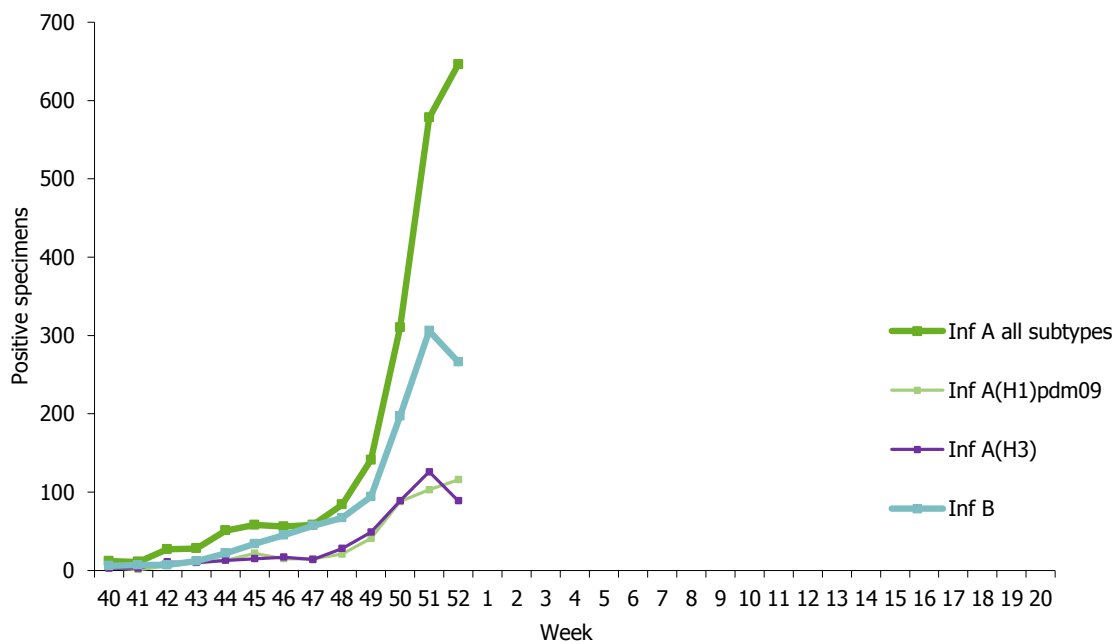


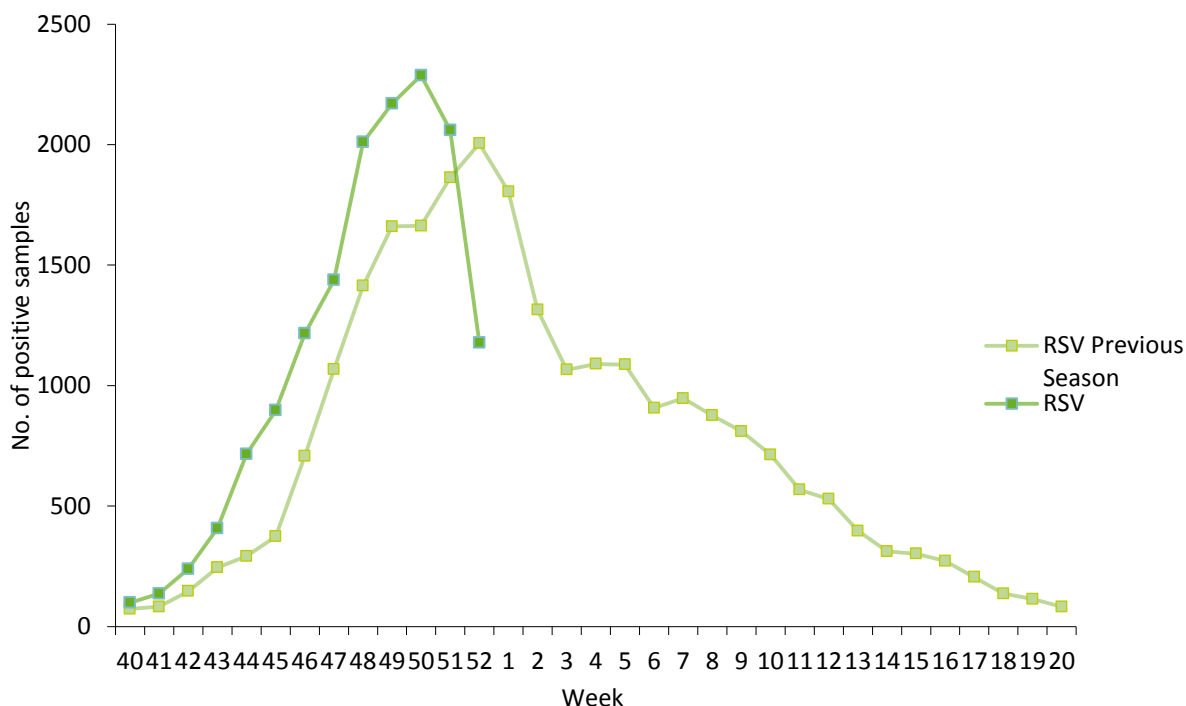
Table 3. Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40–52/2012

Antigenic group	Number of viruses
A(H1)pdm09 A/California/7/2009 (H1N1)-like	6
A(H1)pdm09 not attributed to category	2
A(H3) A/Victoria/361/2011 (H3N2)-like	52
A(H3) not attributed to category	1
B/Brisbane/60/2008-like (B/Victoria/2/87 lineage)	8
B/Wisconsin/1/2010-like (B/Yamagata/16/88-lineage)	14

Table 4. Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40–52/2012

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 40–52/2012



The number of RSV detections reported have fallen for two weeks in a row though this took place in the period when surveillance may be affected by the holiday season in Europe.

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](#).

Country comments

Slovakia: in the last week of the year, there was a significant decrease of ILI and ARI because of Christmas and New Year holidays

Hospital surveillance – severe influenza disease

Weekly analysis of hospitalised laboratory-confirmed influenza cases

In week 52/2012, 42 hospitalised laboratory-confirmed influenza cases were reported by Belgium, France, Ireland and the UK (England) (Tables 5 and 6).

Since week 40/2012, and following the UK (England) update on hospitalised laboratory-confirmed cases, there have been 135 cases reported by seven countries (Table 5). In total, 77 (57.0%) cases were related to influenza type A and 58 (43.0%) to type B. Of 38 subtyped influenza A viruses, 21 (55.3%) were A(H3) and 17 (44.7%) were A(H1)pdm09 viruses (Table 6).

Table 5. Cumulative number of hospitalised laboratory-confirmed influenza cases, weeks 40–52/2012

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
Belgium	2				
France	4		1		
Ireland	8				
Slovakia	1	0.02			5435273
Spain	6				
Sweden	1				
United Kingdom	113	0.19			59255492
Total	135		1		

Table 6. Number of hospitalised laboratory-confirmed influenza cases by influenza type and subtype, weeks 40–52/2012

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	20	77
A(H1)pdm09	2	17
A(H3)	7	21
A(sub-typing not performed)	11	39
Influenza B	22	58
Total	42	135

This report was written by an editorial team at the European Centre for Disease Prevention and Control (ECDC): Eva 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.

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