

SURVEILLANCE REPORT

Weekly influenza surveillance overview

18 January 2013

Main surveillance developments in week 2/2013 (7–13 January 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 2012–13 season started in week 40/2012 and the period of influenza transmission began around week 49/2012, considerably earlier than in 2011/2012.

- Of 26 countries reporting clinical data in week 2/2013, 14 reported medium- or high-intensity transmission and 19 reported increasing trends. At present, indications of higher transmission levels are mostly coming from the north west of Europe.
- Of 1 238 sentinel specimens tested across 20 countries in week 2/2013, 521 (42%) were positive for influenza virus – a high percentage and similar to that seen in the two previous weeks. Of the 2 102 influenza virus detections in sentinel specimens since week 40/2012, 991 (47%) were type A, and 1 111 (53%) were type B viruses. Among the A viruses subtyped the proportions of A(H1) pdm09 (52%) and A(H3) (48%) were very similar.
- Since week 40/2012, 383 hospitalised laboratory-confirmed influenza cases have been reported, of which 14 had a fatal outcome. There are some early indications of increases in overall mortality in older people associated with the influenza epidemics.
- In the UK there has been an apparent rise in a specific, severe pneumonia due to toxin-producing strains of *Staphylococcus aureus* (PVL-SA), possibly associated with influenza.

Influenza activity continued to increase in week 2/2013 across Europe, with reports of severe cases from a number of countries. The patterns of virus co-circulation being identified in the EU/EEA are different from that being reported by North America where A(H3) viruses are dominant.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): ILI/ARI activity of medium or high intensity was notified by 14 countries, with the majority of them reporting geographic spread as widespread. For more information, [click here](#).

Virological surveillance: Twenty countries tested 1 238 sentinel specimens, of which 521 (42%) were positive for influenza virus. For more information, [click here](#).

Hospital surveillance of influenza laboratory-confirmed cases: In week 2/2013, 49 hospitalised laboratory-confirmed influenza cases were reported, inclusive of three fatalities. For more information, [click here](#).

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

For week 2/2013, 26 countries out of a possible 29 reported clinical data. Of these, 12 countries reported low-intensity transmission, 12 medium intensity and Iceland and Norway reported high intensity (Table 1, Map 1). The Czech Republic and Slovenia have reported medium intensity for the first time this season, while 12 countries have been reporting medium or high intensity for at least two consecutive weeks. France and Italy have been reporting medium intensity for four consecutive weeks.

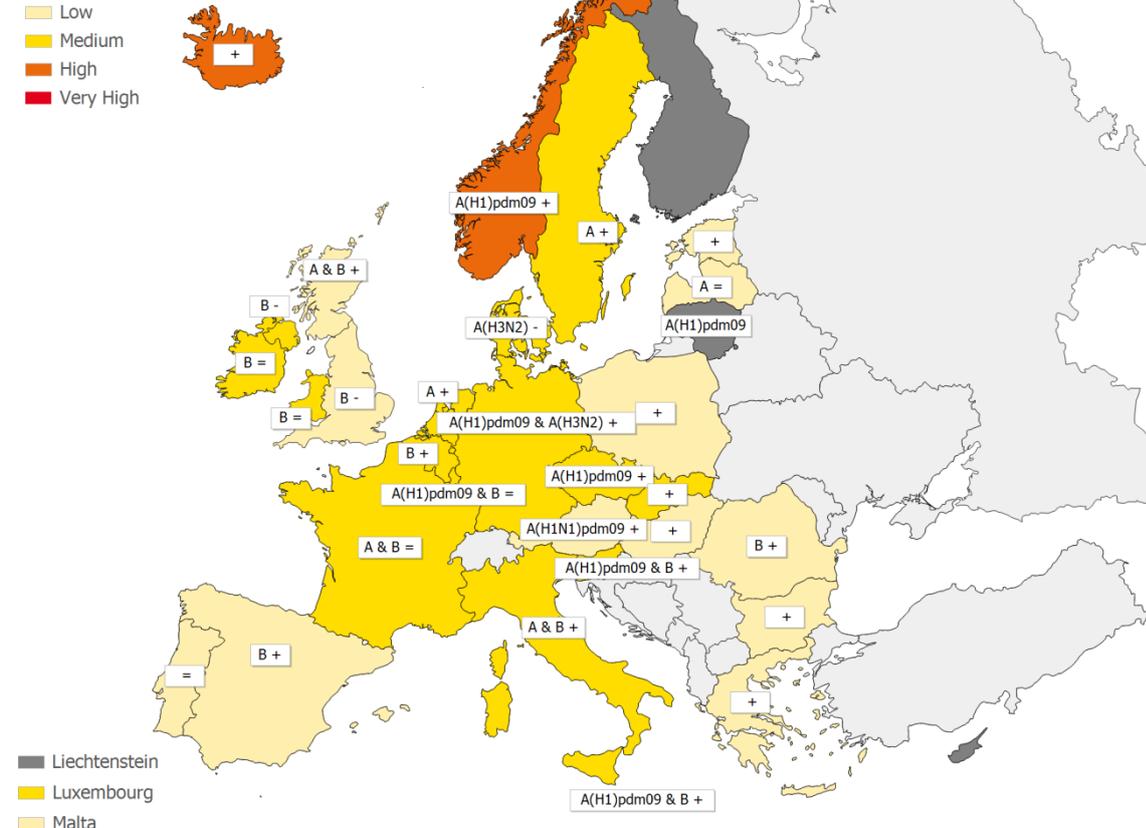
The geographic spread of influenza activity was reported as widespread by 12 countries, regional by two (Austria and Italy), local by four, and sporadic by seven. Only Bulgaria reported no activity (Table 1, Map 2). These proportions indicate increases in geographic spread compared to week 1/2013 when 10 countries reported widespread activity and three reported no activity.

Increasing trends in clinical activity were reported by 19 countries (Table 1, Map 2). This compared to 16 of 26 countries in week 01/2013. Stable trends were reported by five countries and only Denmark and the UK reported decreasing trends.

Map 1. Intensity for week 2/2013

Intensity

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



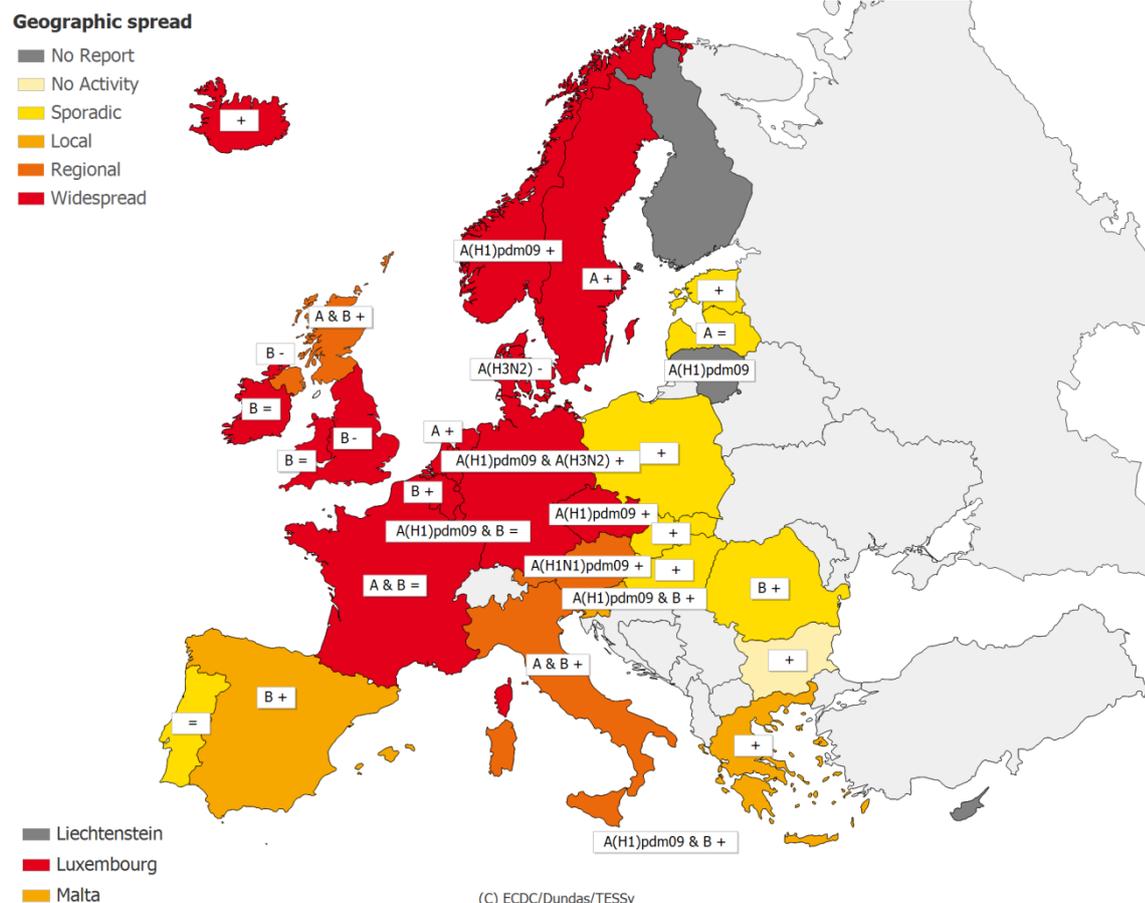
(C) ECDC/Dundas/TESSy

* 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	Type A
Very high	Particularly severe levels of influenza activity	A & B	Type A and B
		A(H1)pdm09	Type A, Subtype (H1)pdm09
		A(H1)pdm09 & A(H3N2)	Type A, Subtype (H1)pdm09 and H3N2
		A(H1)pdm09 & B	Type B and Type A, Subtype (H1)pdm09
		A(H1N1)pdm09	Type A, Subtype (H1N1)pdm09

Map 2. Geographic spread for week 2/2013



* 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	+	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	Type A
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 & B	Type A and B
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(H1)pdm09	Type A, Subtype (H1)pdm09
		A(H1)pdm09 & A(H3N2)	Type A, Subtype (H1)pdm09 and H3N2
		A(H1)pdm09 & B	Type B and Type A, Subtype (H1)pdm09
		A(H1N1)pdm09	Type A, Subtype (H1N1)pdm09
		A(H3N2)	Type A, Subtype H3N2
		B	Type B

Table 1. Epidemiological and virological overview by country, week 2/2013

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	Low	Regional	Increasing	26	A(H1N1)pdm09	38.5	27.5	-	Graphs	Graphs
Belgium	Medium	Widespread	Increasing	65	B	52.3	344.8	1876.1	Graphs	Graphs
Bulgaria	Low	No activity	Increasing	5	None	0.0	-	838.4	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Medium	Widespread	Increasing	23	A(H1)pdm09	56.5	118.6	1240.1	Graphs	Graphs
Denmark	Medium	Widespread	Decreasing	16	A(H3N2)	50.0	119.6	-	Graphs	Graphs
Estonia	Low	Sporadic	Increasing	-	-	0.0	8.9	295.9	Graphs	Graphs
Finland				10	None	10.0	-	-	Graphs	Graphs
France	Medium	Widespread	Stable	220	A & B	45.9	-	2311.5	Graphs	Graphs
Germany	Medium	Widespread	Increasing	135	A(H1)pdm09 & A(H3N2)	45.2	-	1430.1	Graphs	Graphs
Greece	Low	Local	Increasing	0	-	0.0	170.9	-	Graphs	Graphs
Hungary	Low	Sporadic	Increasing	-	-	0.0	93.7	-	Graphs	Graphs
Iceland	High	Widespread	Increasing	0	-	0.0	57.0	-	Graphs	Graphs
Ireland	Medium	Widespread	Stable	50	B	58.0	52.1	-	Graphs	Graphs
Italy	Medium	Regional	Increasing	59	A & B	39.0	449.8	-	Graphs	Graphs
Latvia	Low	Sporadic	Stable	0	A	0.0	3.9	1179.0	Graphs	Graphs
Lithuania				22	A(H1)pdm09	68.2	-	-	Graphs	Graphs
Luxembourg	Medium	Widespread	Stable	33	A(H1)pdm09 & B	45.5	-*	-*	Graphs	Graphs
Malta	Low	Local	Increasing	0	A(H1)pdm09 & B	0.0	-*	-*	Graphs	Graphs
Netherlands	Medium	Widespread	Increasing	32	A	31.3	108.4	-	Graphs	Graphs
Norway	High	Widespread	Increasing	34	A(H1)pdm09	61.8	356.6	-	Graphs	Graphs
Poland	Low	Sporadic	Increasing	-	-	0.0	522.2	-	Graphs	Graphs
Portugal	Low	Sporadic	Stable	4	None	25.0	9.0	-	Graphs	Graphs
Romania	Low	Sporadic	Increasing	15	B	13.3	2.3	545.5	Graphs	Graphs
Slovakia	Medium	Sporadic	Increasing	0	None	0.0	182.9	1686.3	Graphs	Graphs
Slovenia	Medium	Local	Increasing	31	A(H1)pdm09 & B	61.3	18.7	1319.7	Graphs	Graphs
Spain	Low	Local	Increasing	133	B	35.3	50.3	-	Graphs	Graphs
Sweden	Medium	Widespread	Increasing	102	A	22.5	10.8	-	Graphs	Graphs
UK - England	Low	Widespread	Decreasing	149	B	35.6	24.8	431.7	Graphs	Graphs
UK - Northern Ireland	Medium	Regional	Decreasing	16	B	43.8	72.4	495.1	Graphs	Graphs
UK - Scotland	Low	Regional	Increasing	52	A & B	44.2	52.2	731.1	Graphs	Graphs
UK - Wales	Medium	Widespread	Stable	6	B	83.3	26.1	-	Graphs	Graphs
Europe				1 238		42.1				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

Twenty countries tested 1 238 sentinel specimens collected in week 2/2013, of which 521 (42%) were positive for influenza virus: 274 (53%) were type A and 247 (47%) type B (Tables 1–2, Figure 1). This proportion of influenza-positive cases represents a slight decrease compared to week 1/2013 (45%), but with a substantially higher number of specimens tested (1 238 versus 734). In addition, 2 674 non-sentinel source specimens (e.g. specimens collected for diagnostic purposes in hospitals) were found to be positive for influenza virus, of which 2 015 (75%) were type A and 659 (25%) type B (Table 2).

Of the 2 102 influenza virus detections in sentinel specimens since week 40/2012, 991 (47%) were type A, and 1 111 (53%) were type B viruses. Of 846 influenza A viruses subtyped, 444 (52%) were A(H1)pdm09 and 402 (48%) were A(H3) (Table 2, Figure 2). Of the 123 type B viruses ascribed to lineage, 104 (85%) were Yamagata and 19 (15%) Victoria (Table 2).

Of the 9 333 influenza viruses detected from non-sentinel sources since week 40/2012, 6 654 (71%) were type A, and 2 679 (29%) were type B. Of 3 217 type A viruses subtyped, 2 266 (70%) were A(H1)pdm09 and 951 (30%) A(H3). Of the 356 B viruses ascribed to lineage, 332 (93%) were Yamagata and 24 (7%) Victoria (Table 2, Figure 3).

Of the 168 antigenic characterisations of influenza viruses reported for sentinel and non-sentinel specimens since week 40/2012, 93 (55%) have been characterised as A(H3)/Victoria/361/2011-like (Table 3).

The patterns of virus co-circulation in EU/EAA countries are considerably different from that reported in North America where approximately 75% are influenza type A viruses, with very few influenza A(H1)pdm09 viruses, and 25% are B viruses (see [CDC Flu View week 1/2013](#)).

Of the 143 genetic characterisations of influenza viruses reported for sentinel and non-sentinel specimens since week 40/2012, 58 (41%) were A(H3) clade representative A/Victoria/208/2009, of which 39 (67%) came within genetic group 3C, represented by A/Victoria/361/2011 (Table 4).

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

Since week 40/2012, a total of 133 viruses have been tested and reported on by EU/EEA countries: Denmark, Germany, the Netherlands, Norway, Spain, Sweden and the UK. None of the 43 A(H1N1)pdm09, 63 A(H3N2) and 27 B viruses tested for NA1 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.

For week 2/2013, 16 countries reported 1 249 respiratory syncytial virus detections, following a trend similar to last year (Figure 4).

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

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	274	2015	991	6654
A(H1)pdm09	139	903	444	2266
A(H3)	77	73	402	951
A(sub-type unknown)	58	1039	145	3437
Influenza B	247	659	1111	2679
B(Vic) lineage	4	6	19	24
B(Yam) lineage	25	37	104	332
Unknown lineage	218	616	988	2323
Total influenza	521	2674	2102	9333

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 40/2012–2/2013

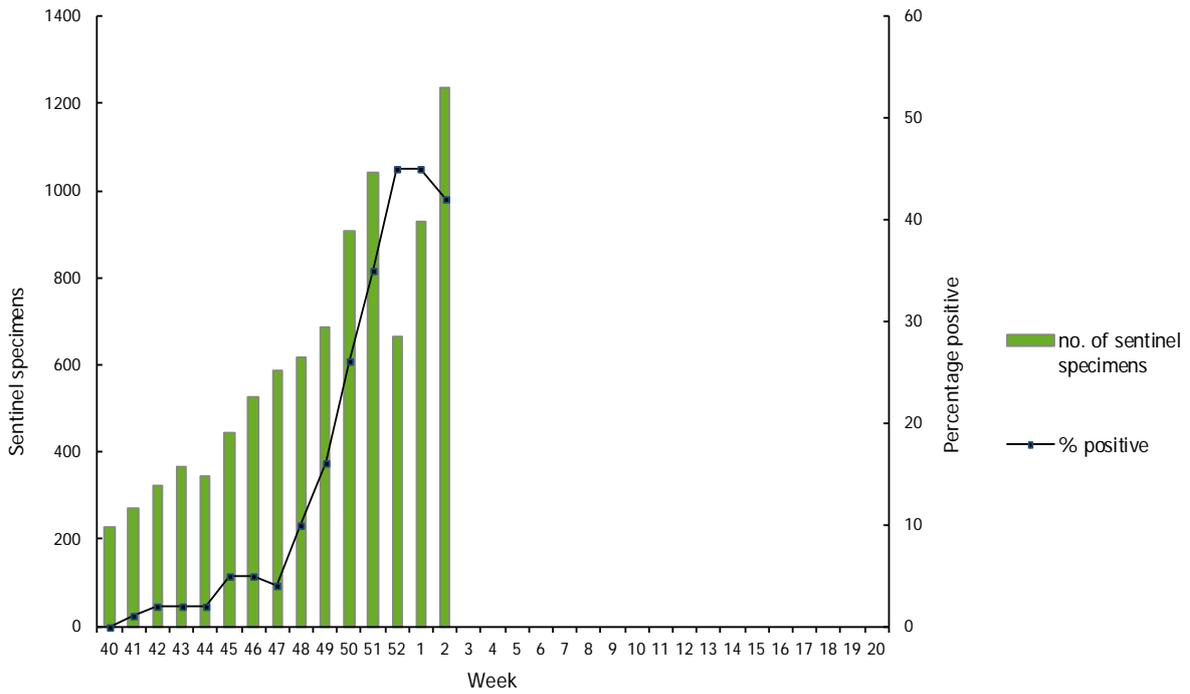


Figure 2. Number of sentinel specimens positive for influenza virus, by type, subtype and week of report, weeks 40/2012–2/2013

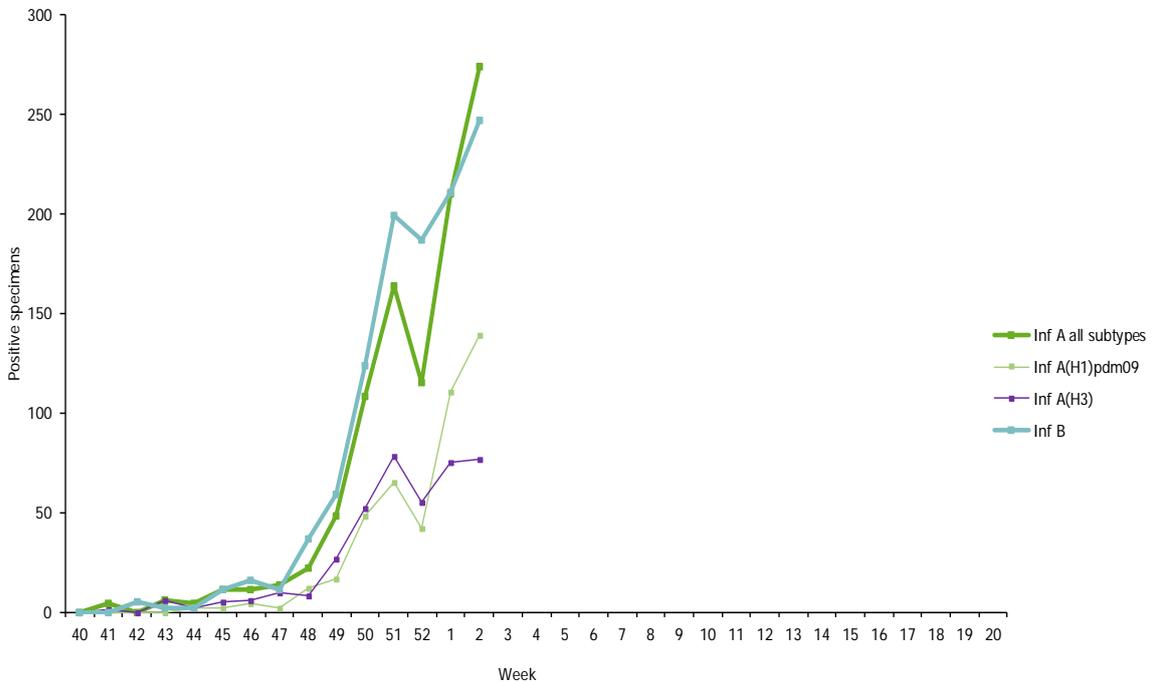
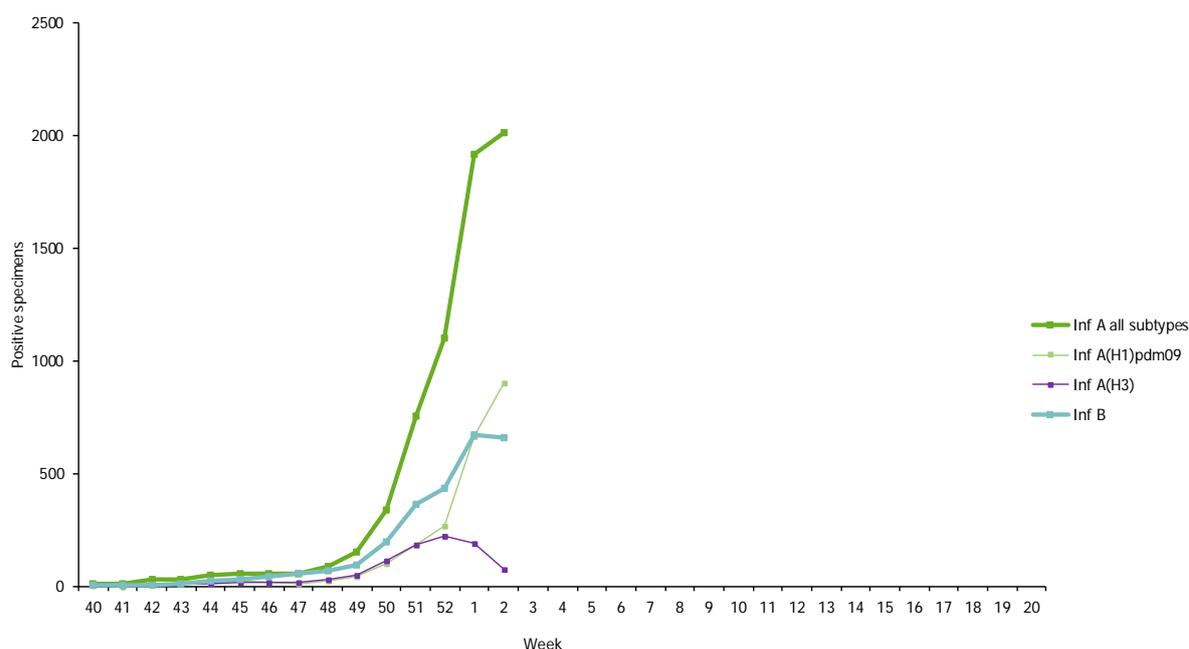


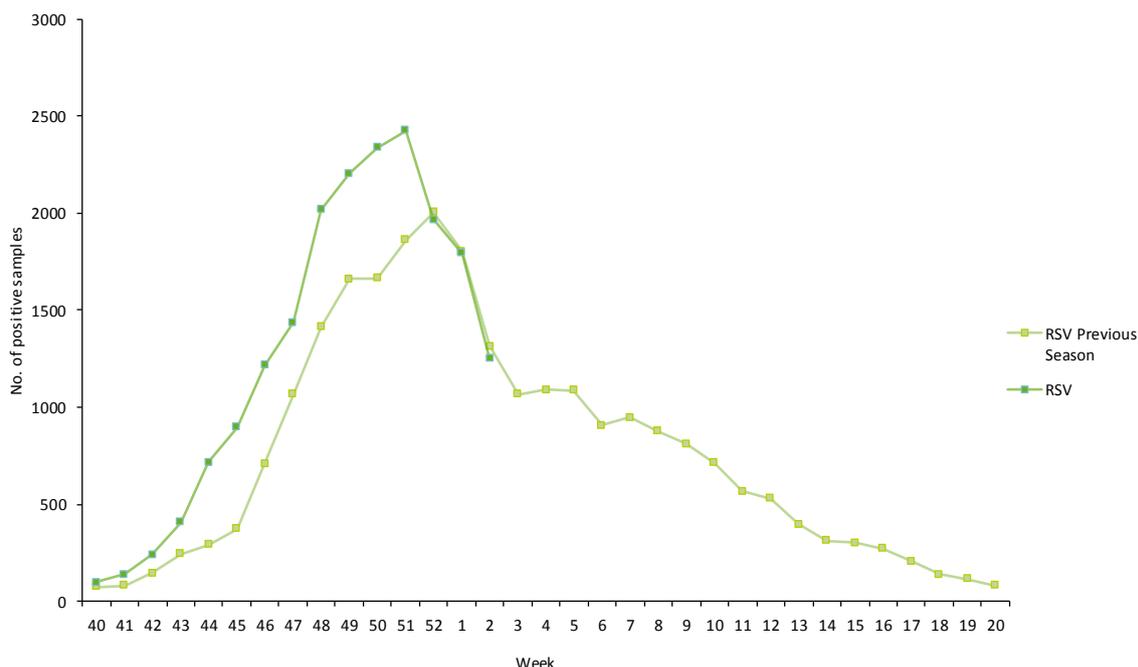
Figure 3. Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2012–2/2013**Table 3.** Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–2/2013

Antigenic group	Number of viruses
A(H1)pdm09 A/California/7/2009 (H1N1)-like	16
A(H1)pdm09 not attributed to category	2
A(H3) A/Victoria/361/2011 (H3N2)-like	93
A(H3) not attributed to category	1
B/Brisbane/60/2008-like (B/Victoria/2/87 lineage)	13
B/Florida/4/2006-like (B/Yamagata/16/88 lineage)	1
B/Wisconsin/1/2010-like (B/Yamagata/16/88-lineage)	42

Table 4. Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–2/2013

Phylogenetic group	Number of viruses
A(H1)pdm09 group 6 representative A/St Petersburg/27/2011	29
A(H1)pdm09 group 7 representative A/St Petersburg/100/2011	11
A(H1)pdm09 not attributed to clade/group	3
A(H3) clade repr. A/Victoria/208/2009 – A/Alabama/05/2010 group 5	16
A(H3) clade repr. A/Victoria/208/2009 – A/Perth/10/2010 group 5	2
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	39
B(Vic) lineage - clade representative B/Brisbane/60/2008	11
B(Yam)-lineage clade repr. B/Wisconsin/1/2010	12
B(Yam)-lineage clade repr. B/Estonia/55669/2011	19

Figure 6. Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2012–2/2013



Country comments

Norway: Three A(H1N1)pdm09 viruses reported in week 51/2012 were not attributable to any genetic category. These viruses belong to subclade 8, as described in the November 2012 Influenza Virus Characterisation Report.

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 the course of week 2/2013, of the 49 hospitalised laboratory-confirmed influenza cases reported by six countries, 20 (41%) tested positive for influenza A viruses and 29 (59%) for type B (Table 5). Of these, France reported three fatal outcome cases.

Since week 40/2012, 383 hospitalised laboratory-confirmed influenza cases have been reported by eight countries (Table 6). In total, 213 (56%) cases were related to influenza type A and 170 (44%) to type B. Of 103 subtyped influenza A viruses, 56 (54%) were A(H1)pdm09 and 47 (46%) were A(H3) viruses (Table 5).

Since week 40/2012, 14 fatalities have been reported by Belgium, France and Sweden. Of the 10 fatal cases with known vaccination status, only one had received the seasonal vaccine.

Table 5. Number of hospitalised laboratory-confirmed influenza cases by influenza type and subtype, week 2/2013 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	20	213
A(H1)pdm09	6	56
A(H3)	1	47
A(sub-typing not performed)	13	110
Influenza B	29	170
Total	49	383

Table 6. Cumulative number of hospitalised laboratory-confirmed influenza cases weeks 40/2012–2/2013

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	32		1		
France	90		12		
Ireland	40				
Romania	1	0.02			5813728
Slovakia	1	0.02			5435273
Spain	17				
Sweden	13		1		
United Kingdom	189	0.32			59255492
Total	383		14		

Country comments and specific information concerning hospitalised cases and mortality

This section is compiled from specific comments and published reports available on national websites (where indicated). They are intended to provide additional information on influenza-associated hospitalisations (including emergency hospital consultations), higher-level care load and mortality.

Czech Republic: [Link here](#). Up to end of week 1/2013 a cumulative total of 80 severe influenza patients with laboratory-confirmed influenza were reported by intensive and resuscitation care units, including 11 deaths.

UK: Apparent rise in PVL pneumonia and possible association with influenza.

Panton-Valentine leukocidin (PVL) cytotoxin-producing strains of *Staphylococcus aureus* (PVL-SA) typically cause skin and soft tissue infections. On very rare occasions these strains can lead to more severe invasive infections and the association with severe Community-Acquired Pneumonia (CAP) is well recognised, with high (50–75%) mortality rates reported.

Over the past four weeks (6 December 2012 – 7 January 2013) the reference laboratory at HPA Colindale (UK England) has confirmed 18 cases of severe CAP caused by PVL-SA. All have been admitted to intensive care units and four (22%) have died to date. This number appears high compared to a national figure of 30-40 PVL-CAP cases per year across England, usually peaking in the winter months. Fourteen were due to methicillin-sensitive *S. aureus* infection and four due to methicillin-resistant *S. aureus*, associated with a variety of strains.

Most cases have reported an influenza-like prodrome, with at least six confirmed as having an influenza B co-infection. Influenza is currently circulating in England, with the dominant strain being influenza B. Cases have been distributed around the country with at least two household clusters identified (of two and three cases). Patients were aged from four to 63 years (median 41 years) and 11 (61%) were female.

Further epidemiological and microbiological work is underway. For more information please see:

<http://www.hpa.org.uk/hpr/news/#pvlisa>

For clinical guidance please see:

http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1267551719486

http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1218699411960

The EUROMOMO mortality monitoring system (see [here](#)): pooled analysis of week 2/2013 did not show any excess of all-cause mortality for this season. However, two out of 16 reporting countries saw a clear increase in mortality in the elderly (65 years and above). In these two countries transmission is predominantly via H3N2, which contributes to the diversity of signals. Due to reporting delays, excess mortality may also appear at a later date. Excess mortality during the influenza season is to be expected as up to 38 500 people are estimated to die prematurely each season in Europe in association with influenza, most of them older people and people with chronic underlying conditions.*

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.

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* Nicoll A, Ciancio BC, Lopez Chavarrias V, Mølbak K, Pebody R, Pedzinski B, et al. Influenza-related deaths – available methods for estimating numbers and detecting patterns for seasonal and pandemic influenza in Europe. Euro Surveill. 2012;17(18). [Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22587958>]