

SURVEILLANCE REPORT

Weekly influenza surveillance overview

11 January 2013

Main surveillance developments in week 1/2013 (31 December 2012–6 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 started around week 49/2012, considerably earlier than in 2011/2012.

In week 1/2013, 26 countries reported clinical information:

- Increasing trends were reported by 16 countries compared to only nine of 20 countries in week 52. Only Romania reported decreasing trends.
- Twelve countries reported medium- or high-intensity transmission. The geographic pattern of influenza activity was reported as widespread by ten countries, representing an increase in proportions over week 52. Countries in northern and western Europe were most affected.
- Of 734 sentinel specimens tested across 20 countries, 320 (44%) were positive for influenza virus – a high percentage but similar to that seen in week 52.
- A total of 167 hospitalised, laboratory-confirmed influenza cases reported by four countries.
- No overall excess of all-cause deaths has appeared as yet this season to date but individual deaths are being reported.

Since the official start of this season in week 40/2012:

- Of the influenza virus detections in sentinel specimens 44% were type A, and 56% were type B viruses. Of influenza A viruses subtyped, 51% were A(H3) and 49% were A(H1). Of the B viruses subtyped 84% were Yamagata and 16% Victoria.
- The virological match with the strains in the current seasonal influenza vaccine is considered good.

Influenza activity and disease increased substantially in a number of EU/EEA countries in week 1/2012, especially in north-western Europe. The virological pattern being identified in the EU/EEA is different from that being reported so far from North America.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Medium- or high-intensity ILI/ARI activity was notified by 12 countries, with the majority of them indicating widespread geographic spread. For more information, [click here](#).

Virological surveillance: Twenty countries reported virological data. Sentinel physicians collected 734 specimens, of which 320 (44%) tested positive for influenza virus. For more information, [click here](#).

Hospital surveillance of influenza laboratory-confirmed cases: For week 01/2013, 167 hospitalised, laboratory-confirmed influenza cases were reported. For more information, [click here](#).

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

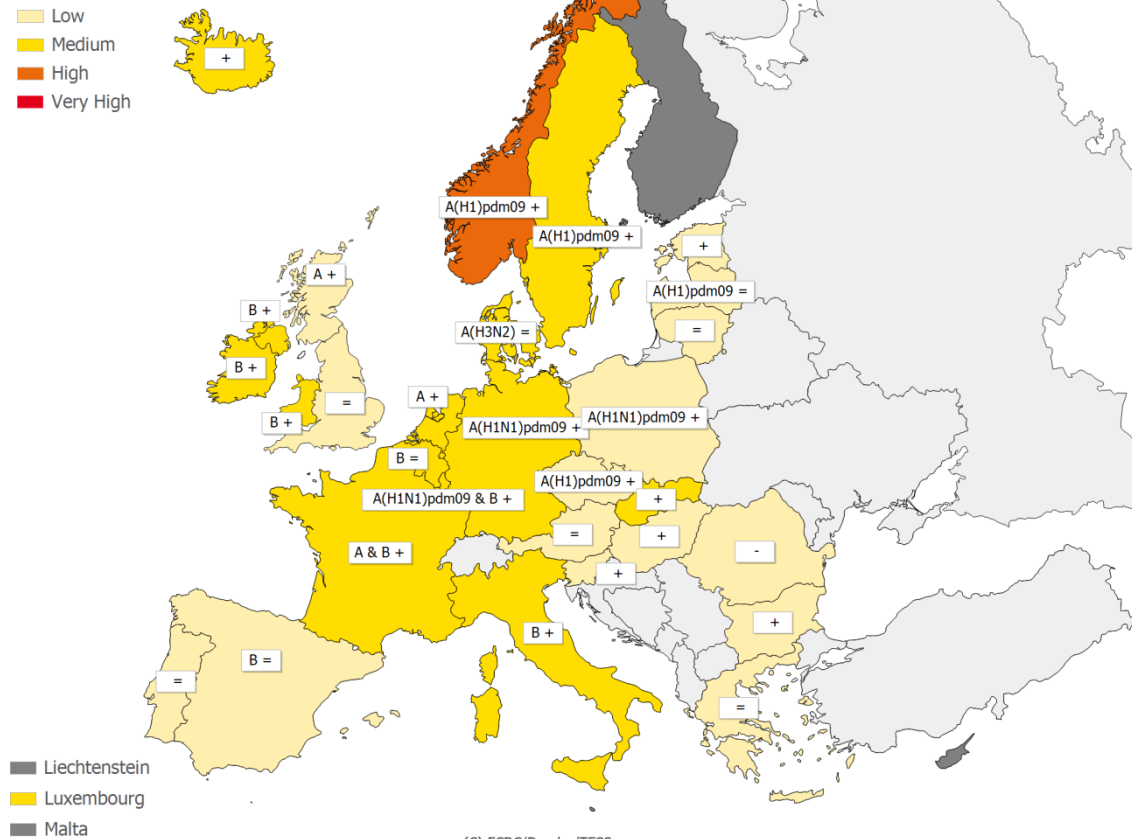
Up to 29 countries can report data. For week 1/2013, 26 countries reported clinical data. Of these, 14 countries reported low-intensity transmission and 11 medium intensity, while Norway reported high intensity (Table 1, Map 1). Belgium, Denmark, Germany, Ireland, Iceland, Slovakia and Sweden all reported medium intensity for the first time this season. France and Italy have been reporting medium intensity for three consecutive weeks. In contrast, only four countries out of 20 reported medium-intensity transmission in week 52/2012.

For week 1/2013, the geographic pattern of influenza activity was reported as widespread by 10 countries, regional by three countries (the Czech Republic, Germany and Italy), local by Austria and sporadic by nine countries. Only three countries (Bulgaria, Portugal and Romania) reported no activity (Table 1, Map 2). In week 52/2012, only five countries reported widespread transmission.

For week 01/2013, increasing trends in clinical activity were reported by 16 countries (Table 1, Map 2). This compares to only 10 of 20 countries in week 52/2012. For week 1/2013, stable trends were reported by nine countries and only Romania reported a decreasing trend.

Map 1. Intensity for week 1/2013**Intensity**

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



(C) ECDC/Dundas/TESSy

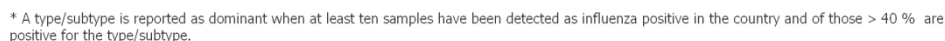
* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

Legend:

No report	Intensity level was not reported
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	Type A, Subtype (H1)pdm09
A(H1N1)pdm09	Type A, Subtype (H1N1)pdm09
A(H1N1)pdm09 & B	Type B and Type A, Subtype (H1N1)pdm09
A(H3N2)	Type A, Subtype H3N2
B	Type B

Geographic spread



No report Activity level was not reported

No activity	No evidence of influenza virus activity (clinical activity remains at baseline levels)
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Sporadic	Isolated cases of laboratory confirmed influenza infection
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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 Type A, Subtype (H1)pdm09

A(H1N1)pdm09 Type A, Subtype (H1N1)pdm09

A(H1N1)pdm09 & B Type B and Type A, Subtype (H1N1)pdm09

A(H3N2) Type A, Subtype H3N2

B Type B

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

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	Local	Stable	11	None	27.3	10.1	-	Graphs	Graphs
Belgium	Medium	Widespread	Stable	33	B	75.8	192.6	1818.9	Graphs	Graphs
Bulgaria	Low	No activity	Increasing	8	None	0.0	-	479.9	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	Regional	Increasing	5	A(H1)pdm09	20.0	58.3	906.0	Graphs	Graphs
Denmark	Medium	Widespread	Stable	7	A(H3N2)	100.0	150.9	-	Graphs	Graphs
Estonia	Low	Sporadic	Increasing	-	-	0.0	8.4	232.9	Graphs	Graphs
Finland				4	None	25.0	-	-	Graphs	Graphs
France	Medium	Widespread	Increasing	111	A & B	38.7	-	2213.2	Graphs	Graphs
Germany	Medium	Regional	Increasing	69	A(H1N1)pdm09	30.4	-	1034.2	Graphs	Graphs
Greece	Low	Sporadic	Stable	0	None	0.0	393.1	-	Graphs	Graphs
Hungary	Low	Sporadic	Increasing	10	None	30.0	45.2	-	Graphs	Graphs
Iceland	Medium	Widespread	Increasing	0	-	0.0	25.0	-	Graphs	Graphs
Ireland	Medium	Widespread	Increasing	55	B	72.7	63.0	-	Graphs	Graphs
Italy	Medium	Regional	Increasing	13	B	38.5	329.5	-	Graphs	Graphs
Latvia	Low	Sporadic	Stable	0	A(H1)pdm09	0.0	0.0	875.2	Graphs	Graphs
Lithuania	Low	Sporadic	Stable	-	-	0.0	8.9	442.9	Graphs	Graphs
Luxembourg	Medium	Widespread	Increasing	15	A(H1N1)pdm09 & B	46.7	-*	-*	Graphs	Graphs
Malta				-	-	0.0	-	-		
Netherlands	Medium	Widespread	Increasing	12	A	58.3	82.1	-	Graphs	Graphs
Norway	High	Widespread	Increasing	35	A(H1)pdm09	57.1	43.6	-	Graphs	Graphs
Poland	Low	Sporadic	Increasing	66	A(H1N1)pdm09	42.4	350.9	-	Graphs	Graphs
Portugal	Low	No activity	Stable	-	-	0.0	8.2	-	Graphs	Graphs
Romania	Low	No activity	Decreasing	6	-	0.0	1.2	327.5	Graphs	Graphs
Slovakia	Medium	Sporadic	Increasing	0	None	0.0	84.7	1134.9	Graphs	Graphs
Slovenia	Low	Sporadic	Increasing	25	None	36.0	4.5	991.7	Graphs	Graphs
Spain	Low	Sporadic	Stable	41	B	19.5	23.6	-	Graphs	Graphs
Sweden	Medium	Widespread	Increasing	46	A(H1)pdm09	32.6	11.2	-	Graphs	Graphs
UK - England	Low	Widespread	Stable	143	None	47.6	29.2	476.4	Graphs	Graphs
UK - Northern Ireland	Medium	Regional	Increasing	10	B	50.0	87.0	571.7	Graphs	Graphs
UK - Scotland	Low	Regional	Increasing	6	A	50.0	46.3	993.6	Graphs	Graphs
UK - Wales	Medium	Widespread	Increasing	3	B	33.3	33.0	-	Graphs	Graphs
Europe				734		43.6				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 the course of week 1/2013, 20 countries tested 734 sentinel specimens, of which 320 (44%) were positive for influenza virus: 146 (46%) were type A and 174 (54%) type B (Tables 1–2, Figure 1). This proportion of influenza-positive cases represents a slight decrease compared to week 52/2012 (45%) and brings to an end the continuous increase since week 47/2012. In addition, 2 367 non-sentinel source specimens (e.g. specimens collected for diagnostic purposes in hospitals) were found to be positive for influenza virus, of which 1 768 (75%) were type A and 599 (25%) type B (Table 2).

Of the 1 451 influenza virus detections in sentinel specimens since week 40/2012, 641 (44%) were type A, and 810 (56%) were type B viruses. Of 545 influenza A viruses subtyped, 280 (51%) were A(H3) and 265 (49%) were A(H1)pdm09 (Table 2, Figure 2). Of the 86 type B viruses with known lineage, 72 (84%) were Yamagata and 14 (16%) Victoria (Table 2).

Of the 6 309 influenza viruses detected from non-sentinel sources since week 40/2012, 4 392 (70%) were type A, and 1 917 (30%) were type B. Of 1 960 type A viruses subtyped, 1 266 (65%) were A(H1)pdm09 and 694 (35%) A(H3). Of the 264 B viruses with known lineage, 249 (94%) were Yamagata and 15 (6%) Victoria (Table 2, Figure 3).

This virological pattern is considerably different from that seen in North America where there are very few influenza A(H1N1) viruses (see [CDC Flu View week 52/2012](#)).

Of the 87 antigenic characterisations of influenza viruses reported for sentinel and non-sentinel specimens since week 40/2012, 54 (62%) have been characterised as A(H3)/Victoria/361/2011-like (Table 3).

Of the 120 genetic characterisations of influenza viruses reported for sentinel and non-sentinel specimens since week 40/2012, 47 (39%) were A(H3) clade representative A/Victoria/208/2009, of which 32 (68%) fell in group 3C, represented by A/Victoria/361/2011 (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 with the 2012/13 seasonal vaccine viruses.

Since week 40/2012, 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 (marker) 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 1/2013, 17 countries reported 1 418 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 40/2012–01/2013

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	146	1768	641	4392
A(H1)pdm09	77	612	265	1266
A(H3)	41	102	280	694
A(sub-type unknown)	28	1054	96	2432
Influenza B	174	599	810	1917
B(Vic) lineage	3	4	14	15
B(Yam) lineage	12	24	72	249
Unknown lineage	159	571	724	1653
Total influenza	320	2367	1451	6309

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

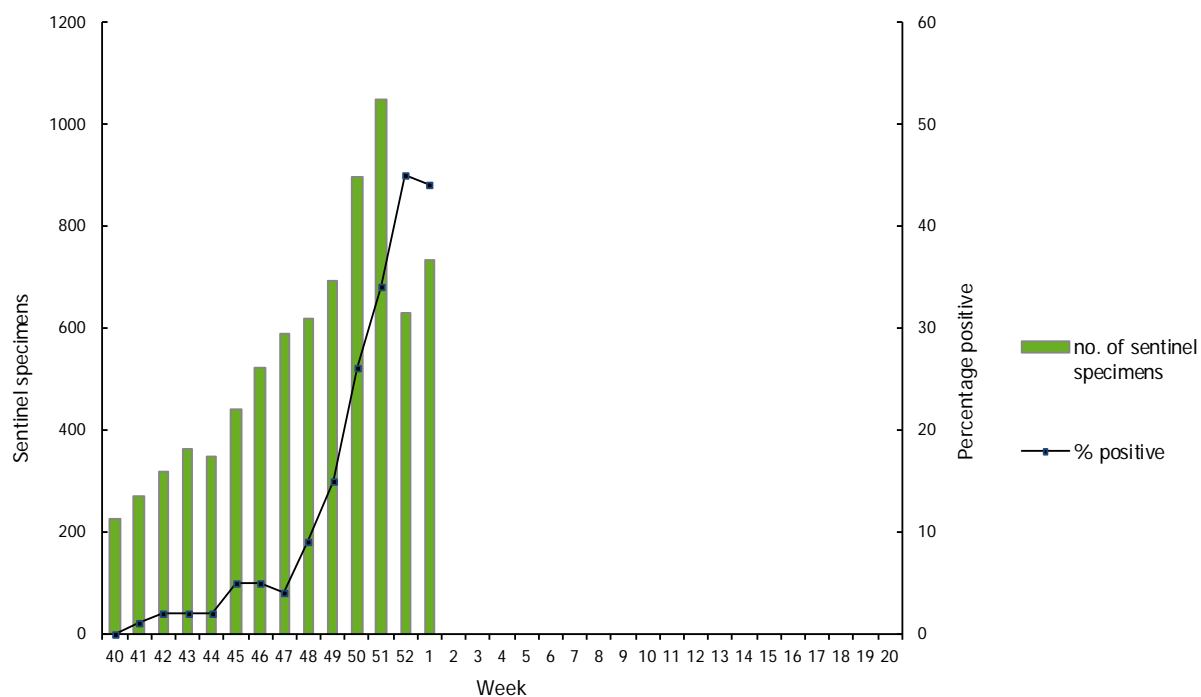
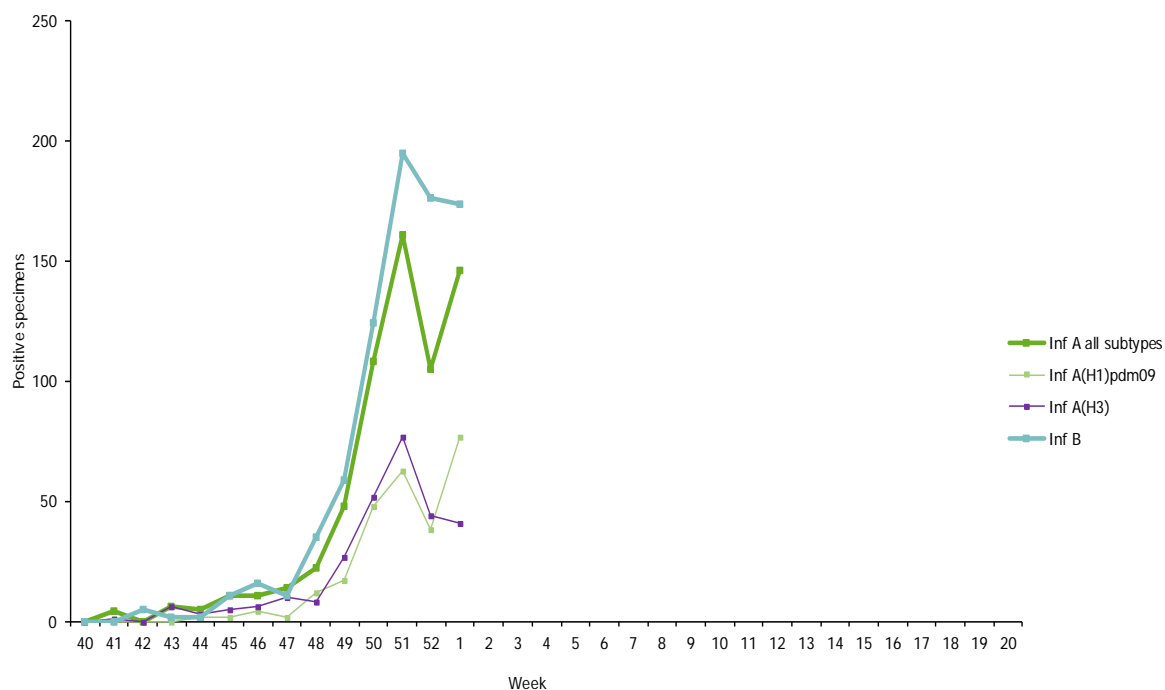
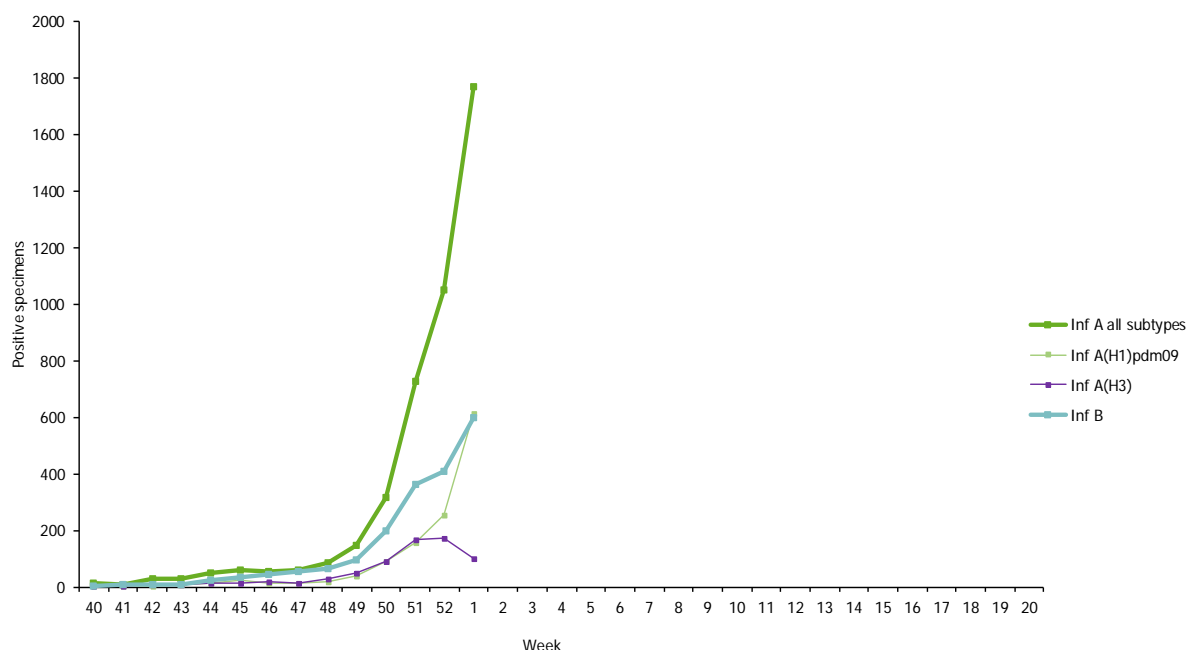
Figure 1. Proportion of sentinel specimens positive for influenza virus, weeks 40/2012–01/2013**Figure 2. Number of sentinel specimens positive for influenza virus, by type, subtype and week of report, weeks 40/2012–01/2013**

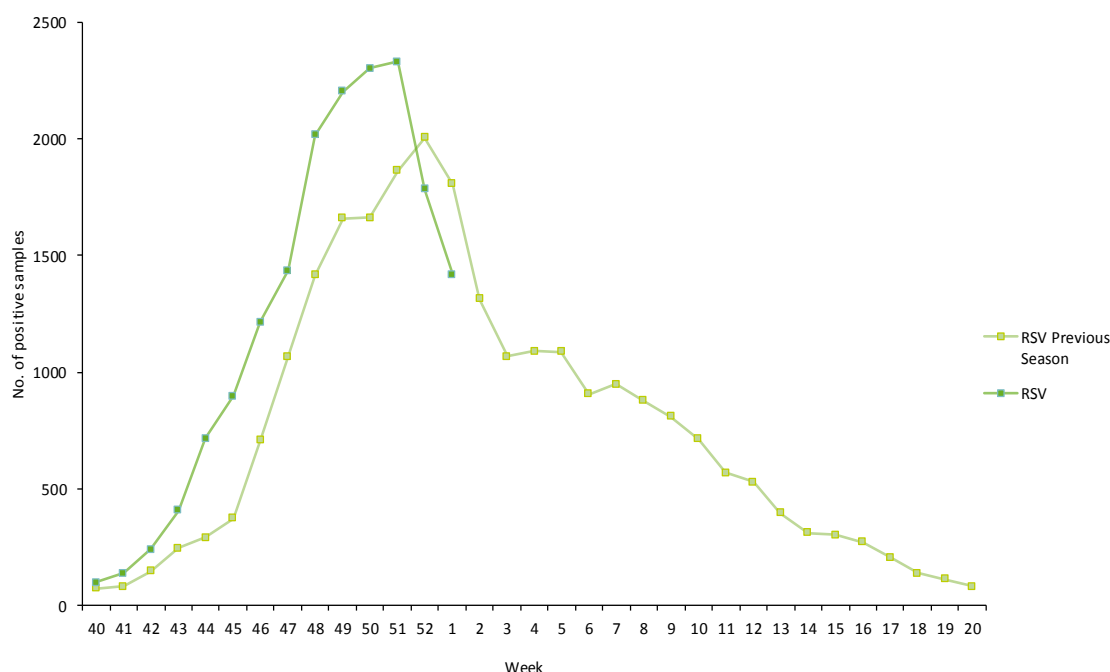
Figure 3. Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2012–01/2013**Table 3.** Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–01/2013

Antigenic group	Number of viruses
A(H1)pdm09 A/California/7/2009 (H1N1)-like	7
A(H1)pdm09 not attributed to category	2
A(H3) A/Victoria/361/2011 (H3N2)-like	54
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)	15

Table 4. Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–01/2013

Phylogenetic group	Number of viruses
A(H1)pdm09 group 6 representative A/St Petersburg/27/2011	23
A(H1)pdm09 group 7 representative A/St Petersburg/100/2011	10
A(H1)pdm09 not attributed to clade/group	2
A(H3) clade repr. A/Victoria/208/2009 – A/Alabama/05/2010 group 5	14
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	32
B(Vic) lineage - clade representative B/Brisbane/60/2008	10
B(Yam)-lineage clade repr. B/Wisconsin/1/2010	10
B(Yam)-lineage clade repr. B/Estonia/55669/2011	18

Figure 4. Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2012–01/2013



Country comments

Norway: Two A(H1N1)pdm09 viruses reported in week 51/2012 were not attributable to any genetic category. These two 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 week 1/2013, 167 hospitalised, laboratory-confirmed influenza cases were reported by four countries, 80 (48%) tested positive for influenza A viruses and 87 (52%) for type B.

Since week 40/2012, 239 hospitalised laboratory-confirmed influenza cases have been reported by seven countries (Table 5). In total, 129 (54%) cases were related to influenza type A and 110 (46%) to type B. Of 66 subtyped influenza A viruses, 34 (52%) were A(H3) and 32 (48%) were A(H1)pdm09 viruses (Table 6).

Table 5. Cumulative number of hospitalised, laboratory-confirmed influenza cases, weeks 40/2012–01/2013

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	23		1		
France	4		1		
Ireland	8				
Slovakia	1	0.02			5435273
Spain	10				
Sweden	4				
United Kingdom	189	0.32			59255492
Total	239		2		

Table 6. Number of hospitalised, laboratory-confirmed influenza cases by influenza type and subtype, week 1/2013 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	80	129
A(H1)pdm09	18	32
A(H3)	17	34
A(sub-typing not performed)	45	63
Influenza B	87	110
Total	167	239

Country comments and specific information concerning hospitalised cases and mortality

This section is compiled from specific comments and published reports available from 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 the end of week 1/2013 a cumulative total of 33 severe-illness patients with laboratory-confirmed influenza A(H1N1)pdm2009 or influenza A (un-subtyped) were reported by intensive and resuscitation care units, including four deaths.

The EUROMOMO mortality monitoring system (see [here](#)) of week 1/2013 did not show any overall excess of all-cause mortality for this season as yet. However in a few countries, mortality among the elderly increased over the last couple of weeks. Due to reporting delays, mortality excesses may only become apparent with a lag of three to four weeks.

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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