



SURVEILLANCE REPORT

Weekly influenza surveillance overview

15 February 2013

Main surveillance developments in week 6/2013 (04–10 Feb 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 active influenza transmission began around week 49/2012, approximately six weeks earlier than in the 2011/2012 season.
- Twenty of 28 reporting countries reported concomitantly high/medium-intensity transmission and wide geographic spread.
- Thirteen of 28 reporting countries reported increasing trends while six reported decreasing trends which compared to 22 reporting increasing trends and only one decreasing in week 5/2013.
- The proportion of influenza-positive sentinel specimens was only slightly less than in week 5/2013 (53% compared with 55%).
- Since the start of the season, the proportions of influenza type A and B viruses have remained similar (51% vs. 49%), but among type A viruses, the percentage of A(H1)pdm09 has continued to increase to 65% as compared with 52% in week 2/2013.
- Of 125 hospitalised laboratory-confirmed influenza cases reported by seven countries, 70 (56%) tested positive for influenza A virus and 55 (44%) for type B virus.
- On 8 February 2013, ECDC published its annual risk assessment for seasonal influenza 2012-2013 based on data up to week 03/2013. The risk assessment is [available here](#).

Influenza activity continued to be substantial across Europe in week 6/2013 despite having peaked in a few countries in earlier weeks.

Sentinel surveillance of influenza-like illness (ILI)/acute respiratory infection (ARI): Twenty-one countries reported medium intensity and 20 wide geographic spread. For more information, [click here](#).

Virological surveillance: Sentinel physicians collected 2 061 specimens, of which 53% tested positive for influenza virus. For more information, [click here](#).

Hospital surveillance of influenza laboratory-confirmed cases: For week 6/2013, 125 hospitalised laboratory-confirmed influenza cases were reported by seven of eight reporting countries. For more information, [click here](#).

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

For week 6/2013, 28 countries reported clinical data. Of these, Germany, Luxembourg and Sweden reported high-intensity and Belgium very high-intensity transmission, while 21 countries reported medium intensity and Cyprus, Poland and the UK reported low intensity (Table 1, Map 1).

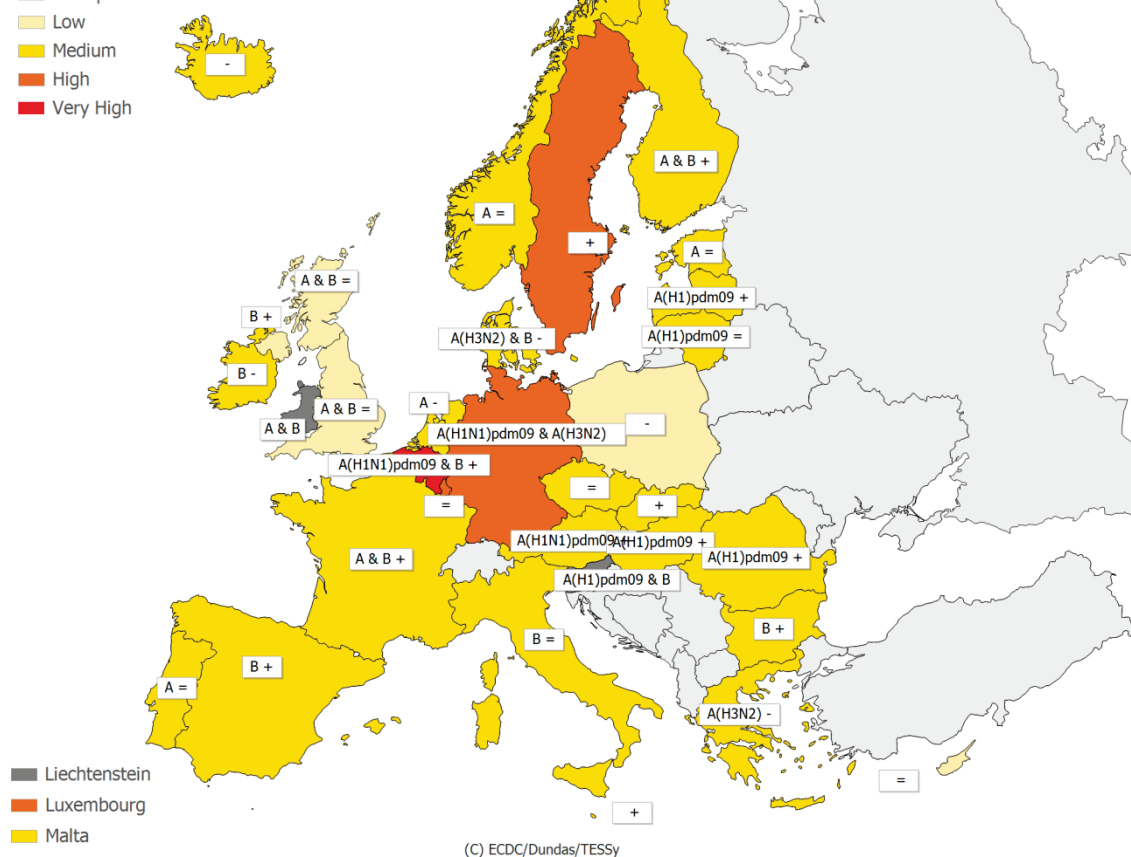
The geographic pattern of influenza activity was reported as widespread by 20 countries, regional by the UK (England and Scotland), local by Bulgaria, Greece, Malta, Romania, Slovakia and the UK (Northern Ireland) and sporadic by Poland. Twenty countries reported concomitantly high/medium-intensity transmission and wide geographic spread (Table 1, Map 2).

Increasing trends were reported by 13 countries and the UK (Northern Ireland) (Table 1, Map 2). Stable trends were reported by eight countries and the UK (England and Scotland) and decreasing trends by six countries.

Overall, the situation reported for week 6/2013 was similar to that observed in the three previous weeks, with most countries reporting medium-intensity transmission and wide geographic spread, and approximately 50% of countries reporting increasing trends.

Map 1. Intensity for week 6/2013**Intensity**

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



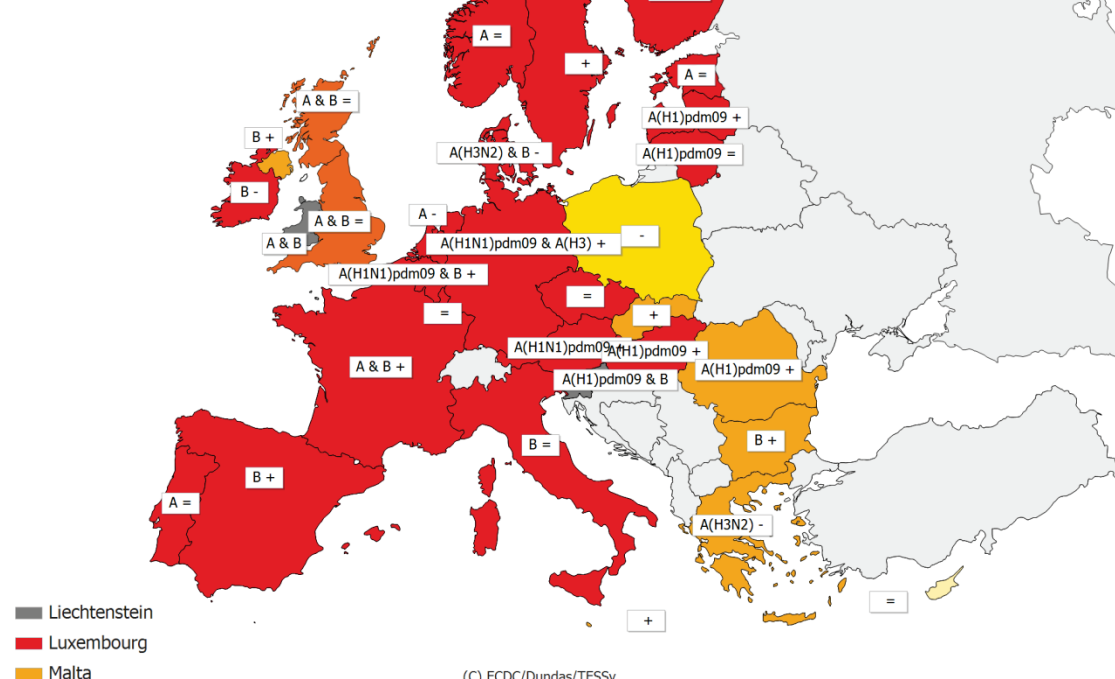
* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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 & B	Type B and Type A, Subtype (H1)pdm09
		A(H1N1)pdm09	Type A, Subtype (H1N1)pdm09
		A(H1N1)pdm09 & A(H3)	Type A, Subtype (H1N1)pdm09 and H3

Map 2. Geographic spread for week 6/2013**Geographic spread**

- No Report
- No Activity
- Sporadic
- Local
- Regional
- Widespread



* 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
		=	Stable clinical activity
Sporadic	Isolated cases of laboratory confirmed influenza infection	A	Type A
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
		A(H1)pdm09	Type A, Subtype (H1)pdm09
		A(H1)pdm09 & B	Type B and Type A, Subtype (H1)pdm09
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(H1N1)pdm09	Type A, Subtype (H1N1)pdm09
		A(H1N1)pdm09 & A(H3)	Type A, Subtype (H1N1)pdm09 and H3
		A(H1N1)pdm09 & B	Type B and Type A, Subtype (H1N1)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
		A(H3N2) & B	Type B and Type A, Subtype H3N2
		B	Type B

Table 1. Epidemiological and virological overview by country, week 6/2013

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	Medium	Widespread	Increasing	89	A(H1N1)pdm09	64.0	1817.7	-	Graphs	Graphs
Belgium	Very High	Widespread	Increasing	114	A(H1N1)pdm09 & B	52.6	1126.9	2513.4	Graphs	Graphs
Bulgaria	Medium	Local	Increasing	40	B	37.5	-	1229.4	Graphs	Graphs
Cyprus	Low	No activity	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic	Medium	Widespread	Stable	-	-	0.0	282.5	1506.8	Graphs	Graphs
Denmark	Medium	Widespread	Decreasing	16	A(H3N2) & B	62.5	195.1	-	Graphs	Graphs
Estonia	Medium	Widespread	Stable	51	A	52.9	22.2	640.5	Graphs	Graphs
Finland	Medium	Widespread	Increasing	49	A & B	34.7	-	-	Graphs	Graphs
France	Medium	Widespread	Increasing	242	A & B	64.0	-	3372.6	Graphs	Graphs
Germany	High	Widespread	Increasing	300	A(H1N1)pdm09 & A(H3)	66.0	-	2260.0	Graphs	Graphs
Greece	Medium	Local	Decreasing	28	A(H3N2)	21.4	162.5	-	Graphs	Graphs
Hungary	Medium	Widespread	Increasing	54	A(H1)pdm09	20.4	233.4	-	Graphs	Graphs
Iceland	Medium	Widespread	Decreasing	0	-	0.0	76.7	-	Graphs	Graphs
Ireland	Medium	Widespread	Decreasing	53	B	54.7	59.2	-	Graphs	Graphs
Italy	Medium	Widespread	Stable	139	B	77.0	985.5	-	Graphs	Graphs
Latvia	Medium	Widespread	Increasing	11	A(H1)pdm09	27.3	438.9	1746.8	Graphs	Graphs
Lithuania	Medium	Widespread	Stable	63	A(H1)pdm09	77.8	363.6	1131.8	Graphs	Graphs
Luxembourg	High	Widespread	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Malta	Medium	Local	Increasing	-	-	0.0	-*	-*	Graphs	Graphs
Netherlands	Medium	Widespread	Decreasing	32	A	62.5	111.5	-	Graphs	Graphs
Norway	Medium	Widespread	Stable	4	A	75.0	187.1	-	Graphs	Graphs
Poland	Low	Sporadic	Decreasing	73	None	15.1	307.6	-	Graphs	Graphs
Portugal	Medium	Widespread	Stable	17	A	58.8	37.9	-	Graphs	Graphs
Romania	Medium	Local	Increasing	7	A(H1)pdm09	57.1	5.2	860.7	Graphs	Graphs
Slovakia	Medium	Local	Increasing	34	None	29.4	593.3	2961.1	Graphs	Graphs
Slovenia				37	A(H1)pdm09 & B	67.6	-	-	Graphs	Graphs
Spain	Medium	Widespread	Increasing	456	B	47.8	224.4	-	Graphs	Graphs
Sweden	High	Widespread	Increasing	-	-	0.0	35.6	-	Graphs	Graphs
UK - England	Low	Regional	Stable	100	A & B	16.0	14.5	369.2	Graphs	Graphs
UK - Northern Ireland	Low	Local	Increasing	4	B	100.0	61.4	475.7	Graphs	Graphs
UK - Scotland	Low	Regional	Stable	43	A & B	37.2	41.6	548.0	Graphs	Graphs
UK - Wales				5	A & B	100.0	-	-	Graphs	Graphs
Europe				2061		52.7				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 6/2013, 23 countries tested 2 061 sentinel specimens, of which 1 086 (53%) were positive for influenza virus, a percentage slightly lower than the percentage in the previous week (55%). Of these 1 086 specimens, 577 (53%) were type A and 509 (47%) type B (Tables 1–2, Figure 1).

Of 3 454 influenza-positive non-sentinel source specimens (e.g. specimens collected for diagnostic purposes in hospitals), 2 100 (61%) were influenza virus type A and 1 354 (39%) were type B (Table 2).

Of the 7 344 influenza virus detections in sentinel specimens since week 40/2012, 3 759 (51%) were type A and 3 585 (49%) were type B viruses. Of 3 291 influenza A viruses subtyped, 2 141 (65%) were A(H1)pdm09 and 1 150 (35%) were A(H3) (Table 2, Figure 2). The proportion of A(H1)pdm09 has continued to increase since week 2/2013 (52%). Of the 567 type B viruses ascribed to a lineage, 503 (89%) were Yamagata and 64 (11%) were Victoria (Table 2).

Of the 1 624 antigenic characterisations of influenza viruses reported for sentinel and non-sentinel specimens since week 40/2012, 779 (48%) have been characterised as A/Victoria/361/2011(H3N2) (Table 3).

Of the 503 genetic characterisations of influenza viruses reported for sentinel and non-sentinel specimens since week 40/2012, 167 (33%) were A(H3) clade representative A/Victoria/208/2009, of which 117 (70%) fell within genetic group 3C, represented by A/Victoria/361/2011 (Table 4).

Both A(H1N1)pdm09 and A(H3N2) viruses have evolved to fall into a number of different genetic groups, which are all antigenically similar to their vaccine viruses, A/California/7/2009 and A/Victoria/361/2011, respectively. Influenza B viruses of the B/Victoria/2/87 and the B/Yamagata/16/88 lineages are co-circulating with the clear dominance of the B/Yamagata lineage viruses this season. B/Yamagata lineage viruses in circulation clearly fall into two distinct genetic clades, represented by B/Estonia/55669/2011 (Clade 2) and B/Wisconsin/1/2010 (Clade 3) respectively. Viruses within these clades remain antigenically similar to the current vaccine virus.

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 vaccine viruses for the 2012/13 season. However observational studies such as by the I-MOVE consortium and others indicate that vaccine effectiveness is in the range 50%–60% (see [I-MOVE Report](#) and [accompanying editorial](#)).

Since week 40/2012, a total of 285 viruses have been tested for antiviral susceptibility and reported on by Denmark, Germany, Greece, the Netherlands, Norway, Spain, Sweden and the UK. One A(H1N1)pdm09 virus tested for neuraminidase inhibitor susceptibility showed the H275Y amino acid substitution associated with oseltamivir highly reduced inhibition. None of the other 107 A(H1N1)pdm09 viruses, the 97 A(H3N2) and 74 B viruses tested for neuraminidase inhibitor susceptibility showed genetic (markers) or phenotypic (IC₅₀) evidence for (highly) reduced inhibition. Ten 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.

In week 6/2013, 17 countries reported 623 respiratory syncytial virus detections, continuing the decline observed since week 52/2012 (Figure 4).

Table 2. Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2012–6/2013

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	577	2100	3759	17511
A(H1)pdm09	311	703	2141	7050
A(H3)	151	137	1150	2227
A(sub-type unknown)	115	1260	468	8234
Influenza B	509	1354	3585	7252
B(Vic) lineage	2	4	64	73
B(Yam) lineage	77	40	503	707
Unknown lineage	430	1310	3018	6472
Total influenza	1086	3454	7344	24763

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

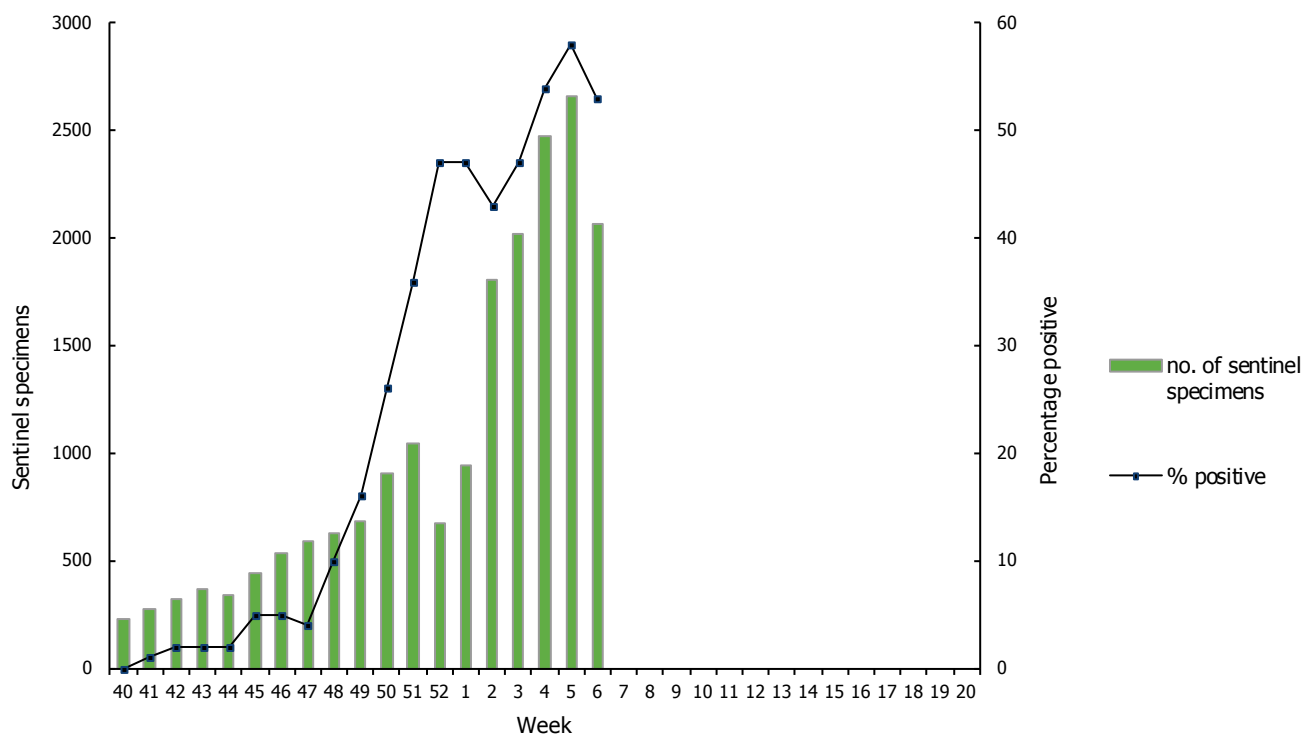
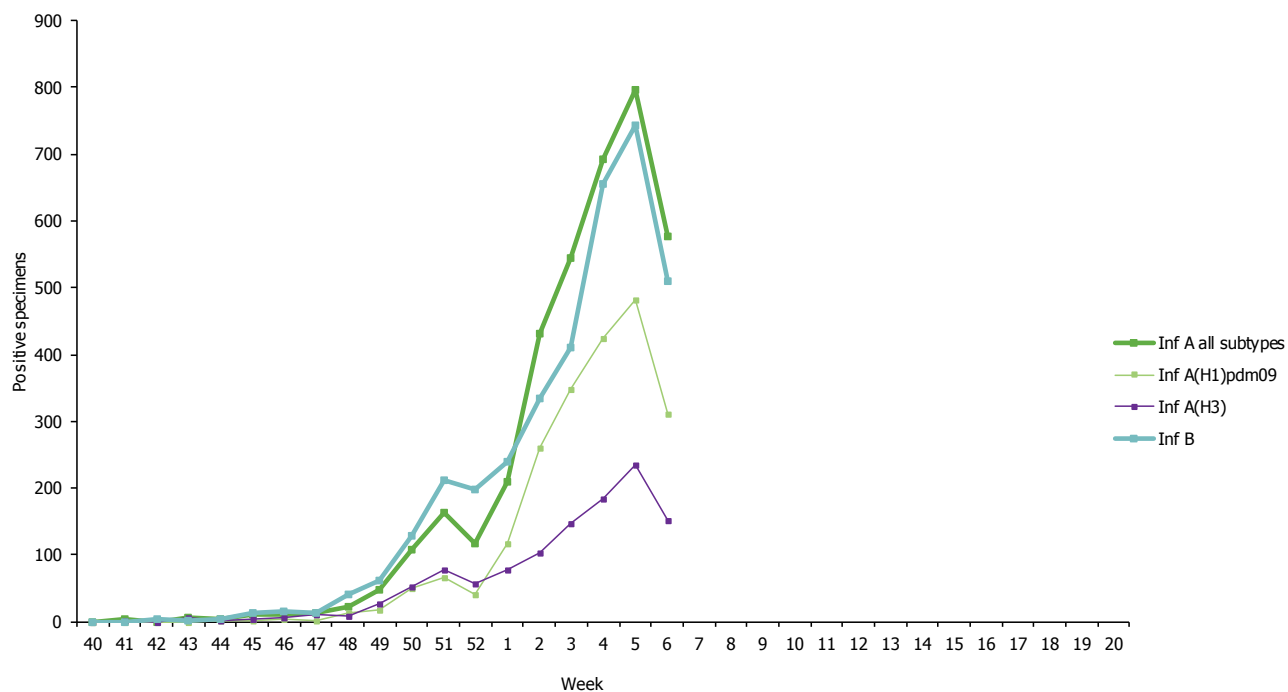
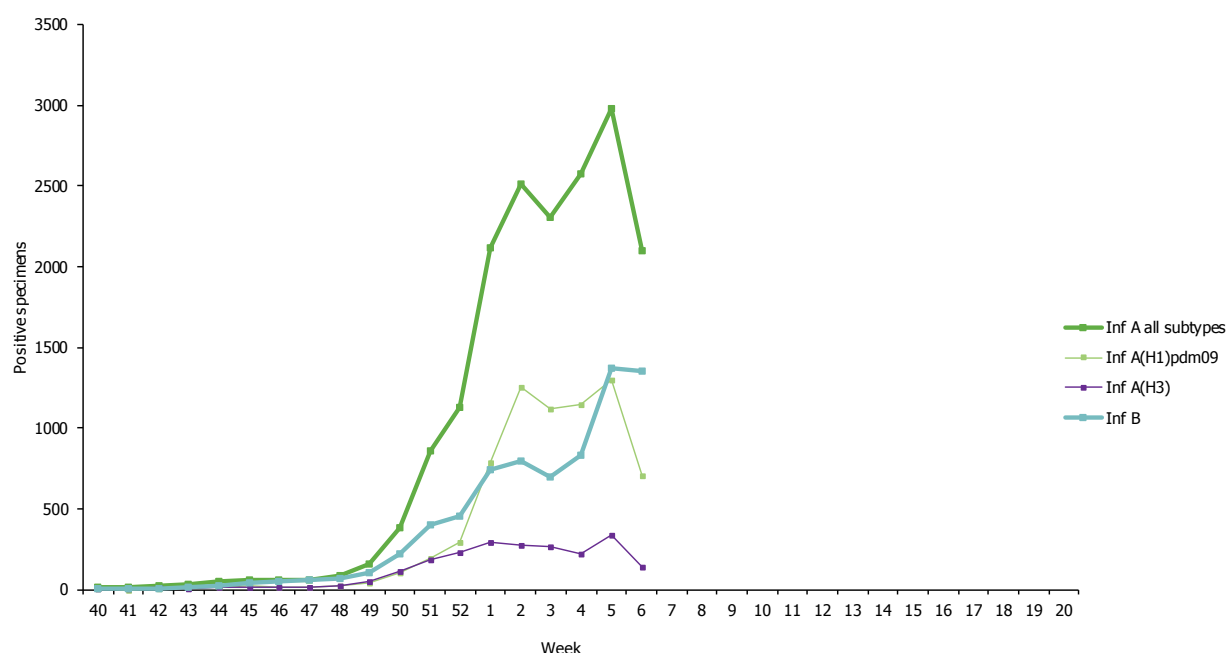
Figure 1. Proportion of sentinel specimens positive for influenza virus, weeks 40/2012–6/2013**Figure 2. Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40/2012–6/2013**

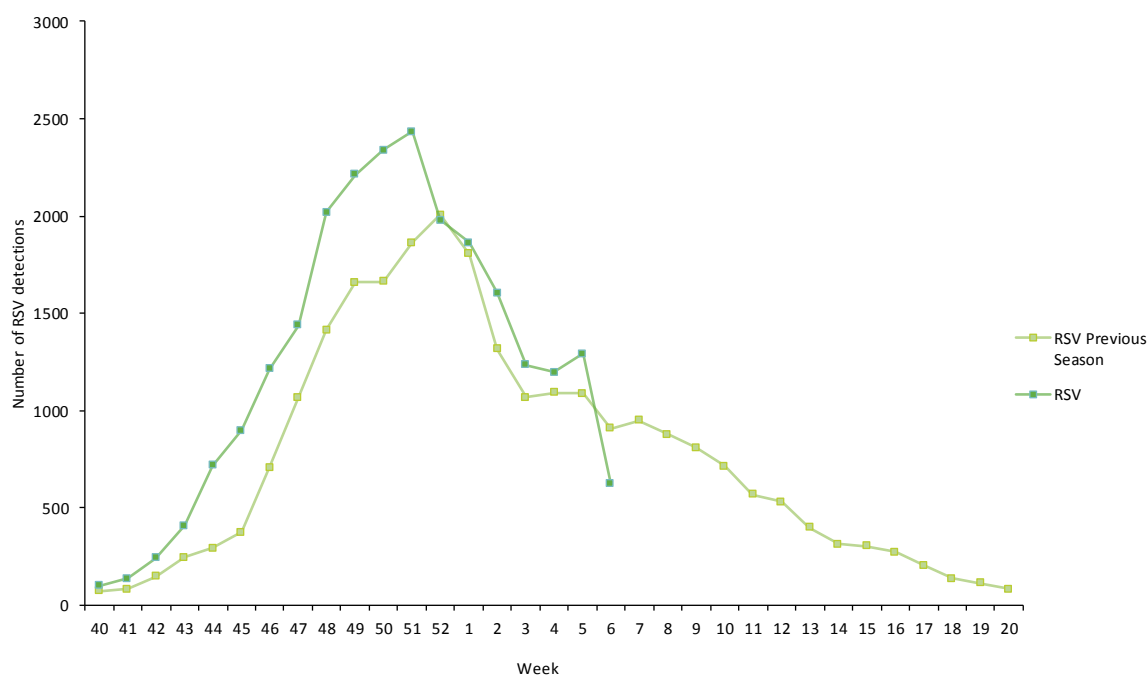
Figure 3. Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2012–6/2013**Table 3. Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–6/2013**

Antigenic group	Number of viruses
A(H1)pdm09 A/California/7/2009 (H1N1)-like	214
A(H1)pdm09 not attributed to category	1
A(H3) A/Perth/16/2009 (H3N2)-like	1
A(H3) A/Victoria/361/2011 (H3N2)-like	779
B/Brisbane/60/2008-like (B/Victoria/2/87 lineage)	83
B(Vic) lineage not attributed to category	1
B/Estonia/55669/2011-like (B/Yamagata/16/88-lineage)	285
B/Florida/4/2006-like (B/Yamagata/16/88 lineage)	3
B/Wisconsin/1/2010-like (B/Yamagata/16/88-lineage)	161
B/Bangladesh/3333/2007-like (B/Yamagata/16/88 lineage)	92
B(Yam) lineage not attributed to category	4

Table 4. Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–6/2013

Phylogenetic group	Number of viruses
A(H1)pdm09 group 6 representative A/St Petersburg/27/2011	82
A(H1)pdm09 group 7 representative A/St Petersburg/100/2011	25
A(H1)pdm09 not attributed to clade/group	5
A(H3) clade repr. A/Victoria/208/2009	30
A(H3) clade repr. A/Victoria/208/2009 – A/Alabama/05/2010 group 5	19
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	117
B(Vic) lineage - clade representative B/Brisbane/60/2008	56
B(Yam) lineage - clade repr. B/Bangladesh/3333/2007	55
B(Yam)-lineage clade repr. B/Wisconsin/1/2010	52
B(Yam)-lineage clade repr. B/Estonia/55669/2011	61
B(Yam)-lineage clade representative B/Brisbane/3/2007	7

Figure 4. Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2012-6/2013



Country comments

In **Denmark**, the season so far has been dominated by A(H3N2) viruses, mainly divided into two genetic groups. An increase of influenza B/Yamagata viruses has been observed in recent weeks.

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

Of the 125 hospitalised laboratory-confirmed influenza cases reported for week 6/2013 by all reporting countries but Ireland, 70 (56%) tested positive for influenza A virus and 55 (44%) for type B (Table 5).

Since week 40/2012, 1 213 hospitalised laboratory-confirmed influenza cases have been reported by eight countries (Table 6): 691 (57%) cases were related to influenza type A and 522 (43%) to type B (Table 5). Of 368 subtyped influenza A viruses, 243 (66%) were A(H1)pdm09 and 125 (34%) were A(H3) viruses.

Since week 40/2012, 54 fatalities have been reported, 36 of which occurred in France where only cases admitted to intensive care units were reported (Table 6).

Table 5. Number of hospitalised laboratory-confirmed influenza cases by influenza type and subtype, week 6/2013 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	70	691
A(H1)pdm09	17	243
A(H3)	6	125
A(sub-typing not performed)	47	323
Influenza B	55	522
Total	125	1213

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

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	162		2		
France	322		36		
Ireland	98				
Romania	23	0.4	1	0.02	5813728
Slovakia	12	0.22	2	0.04	5404555
Spain	104		8		
Sweden	46		5		
United Kingdom	447	0.75			59255492
Total	1214		54		

Country comments

Czech Republic: up to end of week 6/2013, a cumulative total of 350 laboratory-confirmed severe influenza cases including 68 deaths were reported by intensive and resuscitation care units. Further details regarding the current influenza situation were published as a [Rapid Communication](#) in Eurosurveillance on 7 February 2013.

Information from other sources

The EUROMOMO mortality monitoring system

Pooled analysis of week 6/2013, based on 14 countries or regions, showed increased mortality among people aged 65 years and above: all-cause mortality was around 2 z-scores from the baseline since week 50 and around 3 z-scores in week 4 and 5/2013. Results of pooled analysis may vary dependent on which countries are included in the weekly analysis.

Analysis of mortality in individual countries showed a diverse pattern of all-cause mortality in people aged 65 years and above: while in some countries, mortality increases were seen around Christmas, others are currently seeing increases. The remaining countries have not shown any mortality increases yet. The pattern may be explained by influenza activity in Europe, but warrants further analysis.

Influenza in Europe at a glance: a [weekly infographic](#)

As ECDC continues to monitor and report influenza activity in Europe on a weekly basis throughout the season, a new weekly infographic representation of influenza in Europe has been created to visually aid the process. The infographic displays and highlights influenza trends, intensity and the type of viruses circulating. Comments on this are especially welcome and should be sent to influenza@ecdc.europa.eu.

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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