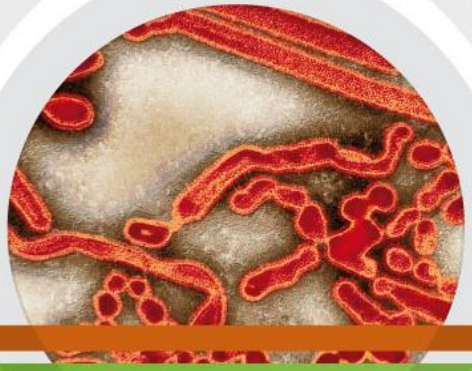


SURVEILLANCE REPORT

Fortnightly influenza surveillance overview

9 May 2013

Main surveillance developments in weeks 17–18/2013 (22 Apr–05 May 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 has reverted to fortnightly reporting after week 16/2013.

Active influenza transmission began around week 49/2012, with ILI/ARI rates peaking in almost all countries between weeks 52/2012 and 8/2013.

- For weeks 17 and 18/2013, all twenty-five participating countries reported low-intensity transmission; decreasing or stable trends were reported by almost all reporting countries.
- The proportion of influenza-positive sentinel specimens (8%) has continued to decrease since the peak observed in week 5/2013 (61%).
- Since week 40/2012, 47% of sentinel surveillance specimens testing positive for influenza virus have been type A and 53% type B. Of the influenza A viruses subtyped, the proportion of A(H1)pdm09 viruses was 62%.
- Of the 3 273 hospitalised laboratory-confirmed influenza cases reported since week 40/2012, 1 988 (61%) cases were related to influenza type A and 1 285 (39%) to type B.

With influenza activity continuing to decline or having already returned to baseline levels in all reporting countries after more than three months of active transmission, the 2012–13 influenza season is coming to an end.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): During the two week reporting period, all reporting countries experienced low-intensity influenza activity. For more information, click here.

Virological surveillance: Twenty-six countries tested 233 sentinel specimens, of which 19 (8%) were positive for influenza virus. For more information, click here.

Hospital surveillance of influenza laboratory-confirmed cases: Since week 40/2012, 3 273 hospitalised laboratory-confirmed influenza cases have been reported, and 225 of these had a fatal outcome. For more information, click here.

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

In weeks 17 and 18/2013, 25 countries reported clinical data. During the two weeks, all reporting countries experienced low-intensity influenza activity, the lowest category of reporting (Table 1, Map 1).

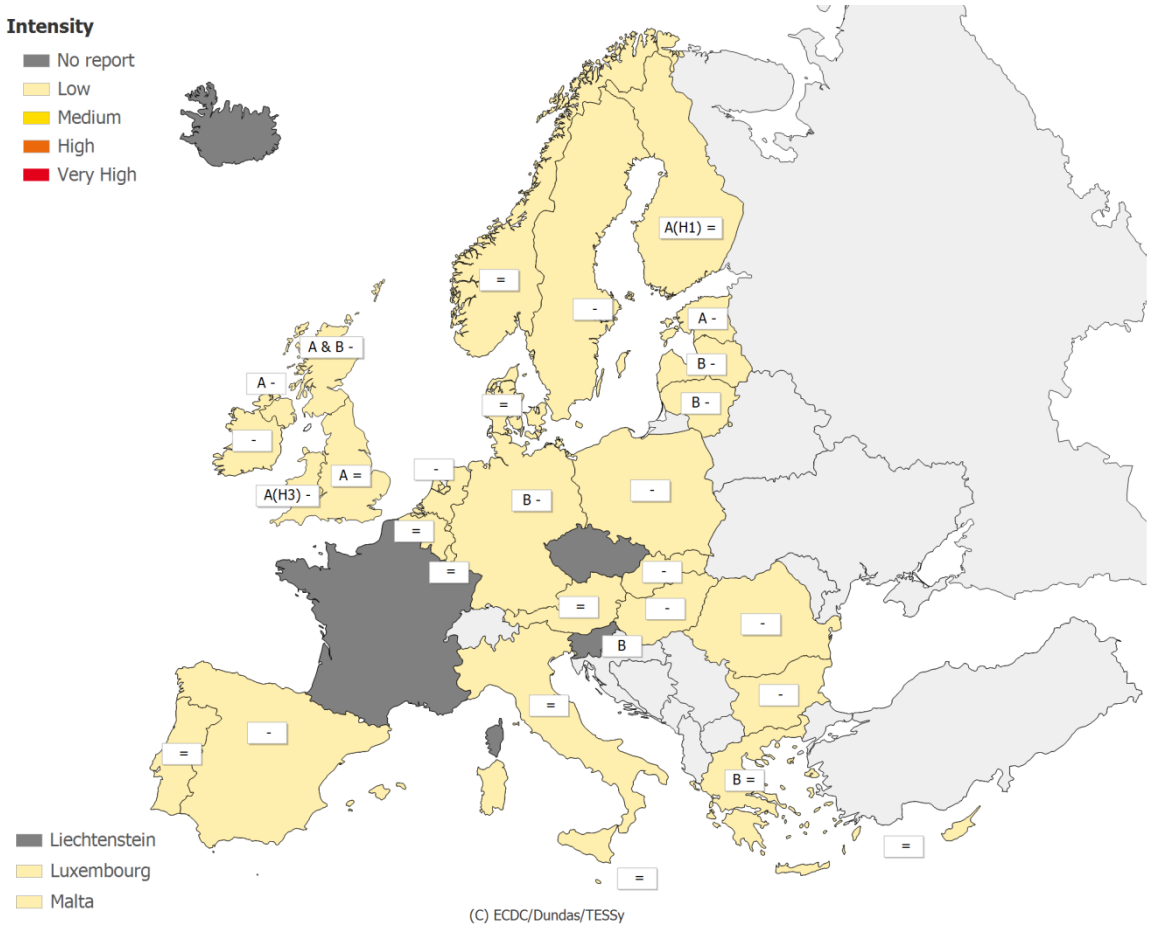
For week 17, geographic patterns of influenza activity were reported as sporadic by 14 countries and as regional or local by six (Finland, Germany, Latvia, Malta, Norway and Sweden). Five countries (Cyprus, Italy, Luxembourg, Poland and Portugal) reported no activity (Table 1, Map 2).

For week 18, geographic patterns of influenza activity were reported as sporadic by fourteen countries and as local by four (Austria, Lithuania, Malta and Norway). Seven countries (Belgium, Cyprus, Finland, Italy, Luxembourg, Poland and Portugal) reported no activity (Table 1, Map 2).

For weeks 17 and 18, most countries reported stable or decreasing trends. The only exception, in week 17, was an increasing trend reported by Finland (Table 1, Map 2).

ILI/ARI rates peaked between weeks 52/2012 and 8/2013 in all reporting countries but Romania, where a peak was observed in week 11/2013. Since week 12/2013, all reporting countries have indicated declining rates or have already reached baseline levels.

Map 1. Intensity for week 18/2013

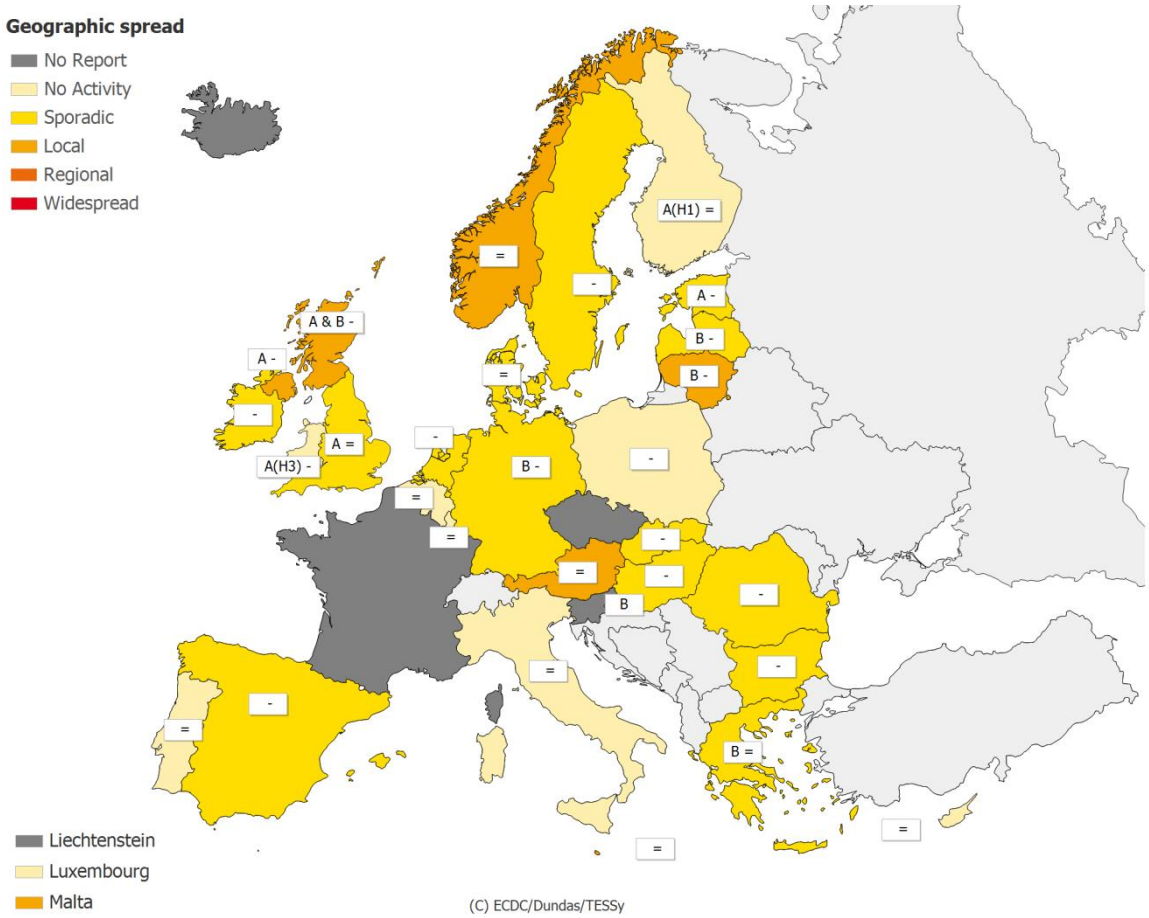


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

Legend:

No report	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)**	Type A, Subtype H1
		B	Type B

Map 2. Geographic spread for week 18/2013



* 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
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)	Type A, Subtype H1
B	Type B

Table 1. Epidemiological and virological overview by country, week 18/2013

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	0	None	0.0	-	-	Graphs	Graphs
Belgium	Low	No activity	Stable	5	None	0.0	8.7	1159.9	Graphs	Graphs
Bulgaria	Low	Sporadic	Decreasing	9	None	0.0	-	352.9	Graphs	Graphs
Cyprus	Low	No activity	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic				6	None	33.3	-	-	Graphs	Graphs
Denmark	Low	Sporadic	Stable	0	None	0.0	23.3	-	Graphs	Graphs
Estonia	Low	Sporadic	Decreasing	3	A	33.3	7.6	277.8	Graphs	Graphs
Finland	Low	No activity	Stable	10	A(H1)	10.0	-	-	Graphs	Graphs
France				-	-	0.0	-	-		
Germany	Low	Sporadic	Decreasing	45	B	15.6	-	750.3	Graphs	Graphs
Greece	Low	Sporadic	Stable	1	B	0.0	85.8	-	Graphs	Graphs
Hungary	Low	Sporadic	Decreasing	7	None	28.6	27.2	-	Graphs	Graphs
Iceland				0	-	0.0	-	-	Graphs	Graphs
Ireland	Low	Sporadic	Decreasing	17	None	0.0	6.7	-	Graphs	Graphs
Italy	Low	No activity	Stable	5	-	0.0	51.4	-	Graphs	Graphs
Latvia	Low	Sporadic	Decreasing	1	B	0.0	15.1	795.9	Graphs	Graphs
Lithuania	Low	Local	Decreasing	1	B	100.0	3.7	418.3	Graphs	Graphs
Luxembourg	Low	No activity	Stable	7	-	0.0	-*	-*	Graphs	Graphs
Malta	Low	Local	Stable	0	None	0.0	-*	-*	Graphs	Graphs
Netherlands	Low	Sporadic	Decreasing	10	None	0.0	24.2	-	Graphs	Graphs
Norway	Low	Local	Stable	0	-	0.0	19.8	-	Graphs	Graphs
Poland	Low	No activity	Decreasing	4	None	0.0	95.1	-	Graphs	Graphs
Portugal	Low	No activity	Stable	-	-	0.0	0.0	-	Graphs	Graphs
Romania	Low	Sporadic	Decreasing	1	None	100.0	1.2	504.9	Graphs	Graphs
Slovakia	Low	Sporadic	Decreasing	1	None	100.0	80.5	1136.6	Graphs	Graphs
Slovenia				1	B	0.0	-	-	Graphs	Graphs
Spain	Low	Sporadic	Decreasing	20	None	0.0	9.5	-	Graphs	Graphs
Sweden	Low	Sporadic	Decreasing	3	None	0.0	2.6	-	Graphs	Graphs
UK – England	Low	Sporadic	Stable	27	A	0.0	5.2	261.0	Graphs	Graphs
UK – Northern Ireland	Low	Local	Decreasing	1	A	0.0	19.4	333.4	Graphs	Graphs
UK – Scotland	Low	Local	Decreasing	48	A & B	6.3	10.5	378.2	Graphs	Graphs
UK – Wales	Low	No activity	Decreasing	0	A(H3)	0.0	5.8	-	Graphs	Graphs
Europe				**233**		**8.2**				**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 weeks 17 and 18/2013, 26 countries tested 233 sentinel specimens, of which 19 (8.2%) were positive for influenza virus. Of the 19 influenza viruses detected, 8 (42%) were type A and 11 (58%) type B (Tables 1–2, Figure 1).

In addition, 410 non-sentinel source specimens (e.g. specimens collected for diagnostic purposes in hospitals) were found to be positive for influenza virus, of which 173 (42%) were type A and 237 (58%) type B (Table 2).

Of the 15 364 influenza virus detections in sentinel specimens since week 40/2012, 7167 (47%) were type A and 8197 (53%) were type B viruses. Of 6 368 influenza A viruses subtyped, 3 961 (62%) were A(H1)pdm09 and 2 407 (38%) were A(H3) (Table 2, Figure 2). Of the 2 988 type B viruses ascribed to lineage, 2 703 (90%) were Yamagata and 285 (10%) Victoria (Table 2).

Since week 40/2012, 4808 antigenic characterisations of influenza viruses have been reported for sentinel and non-sentinel specimens. Of the 2339 antigenic characterisations of influenza A viruses reported, 1398 (60%) have been characterised as A/Victoria/361/2011(H3N2)-like and 924 (40%) as A(H1)pdm09 A/California/7/2009 (H1N1)-like. Of the 2 469 antigenic characterisations of influenza B viruses reported, 1290 (52%) have been characterised as B/Estonia/55669/2011-like (B/Yamagata/16/88-lineage) and 500 (20%) as B/Wisconsin/1/2010-like (Table 3).

Since week 40/2012, 1 709 genetic characterisations of influenza viruses have been reported for sentinel and non-sentinel specimens. Of the 491 A(H1)pdm09 viruses characterised, 384 (78%) belonged to genetic group 6 represented by A/St Petersburg/27/2011. Of the 372 A(H3) viruses characterised, 293 (79%) belonged to the A/Victoria/208/2009 clade, falling within genetic group 3C, represented by A/Victoria/361/2011 (Table 4).

More details on circulating viruses can be found in the March 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 the one carried out by the I-MOVE consortium, indicate that adjusted vaccine effectiveness is in the 50–60% range (see I-MOVE Report).

A total of 1 258 viruses have been tested for antiviral susceptibility, as reported by Denmark, Germany, Greece, the Netherlands, Norway, Portugal, Romania, Spain, Sweden and the UK. Eleven A(H1N1)pdm09 viruses tested for neuraminidase inhibitor susceptibility showed the NA-H275Y amino acid substitution associated with highly reduced inhibition to oseltamivir.

None of the remaining 589 A(H1N1)pdm09 viruses, 278 A(H3N2) and 391 type B viruses tested for neuraminidase inhibitor susceptibility, showed genetic or phenotypic (IC50) evidence for (highly) reduced inhibition. Forty-seven A(H1N1)pdm09 and 47 A(H3N2) viruses screened for M2-blocker susceptibility carried the S31N amino acid substitution in the M2 protein associated with M2-blocker resistance.

For weeks 17 and 18/2013, 14 countries reported 103 respiratory syncytial virus detections, continuing the decline observed since week 52/2012 toward the baseline level (Figure 4).

Table 2. Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2012–18/2013

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	8	173	7167	34451
A(H1)pdm09	3	20	3961	12257
A(H3)	2	41	2407	5437
A(sub-type unknown)	3	112	799	16757
Influenza B	11	237	8197	21439
B(Vic) lineage	0	0	285	180
B(Yam) lineage	7	14	2703	2279
Unknown lineage	4	223	5209	18980
Total influenza	**19**	**410**	**15364**	**55890**

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 40/2012–18/2013

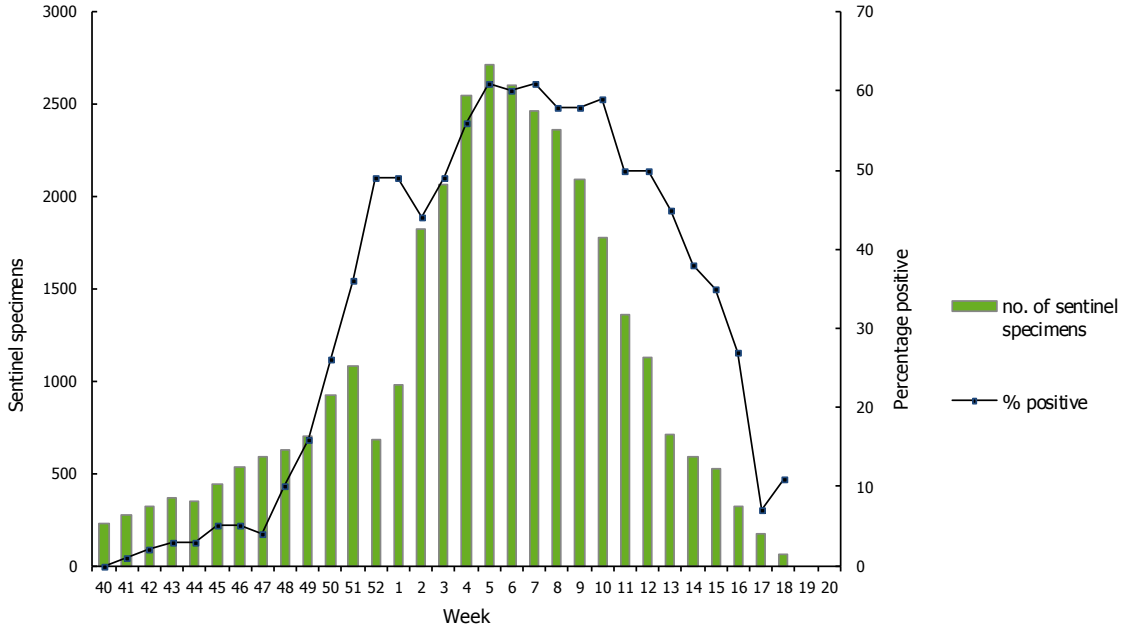


Figure 2. Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40/2012–18/2013

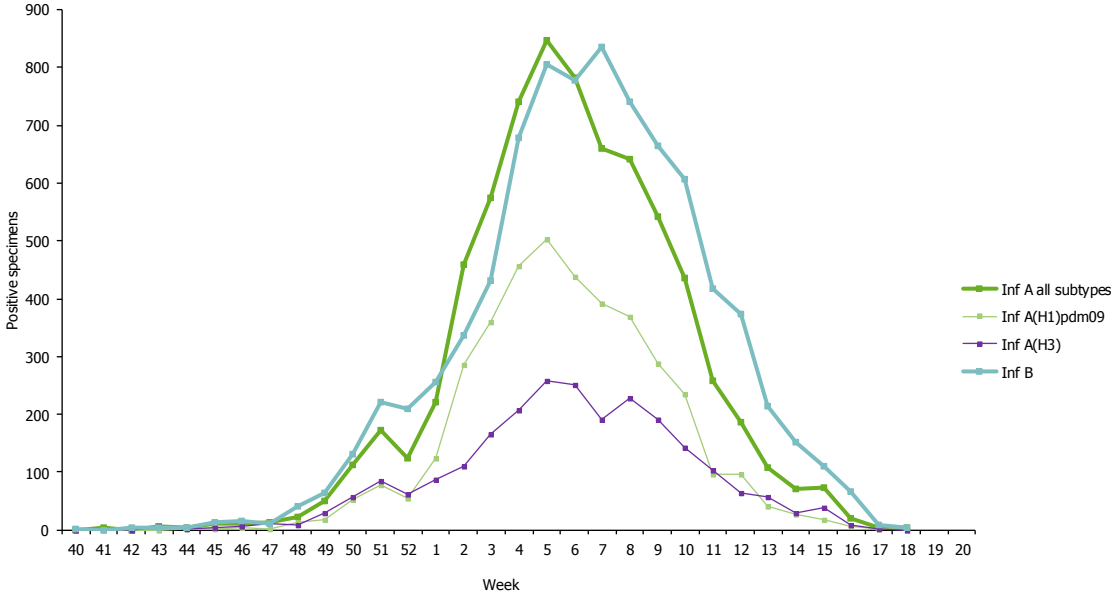


Figure 3. Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2012–18/2013

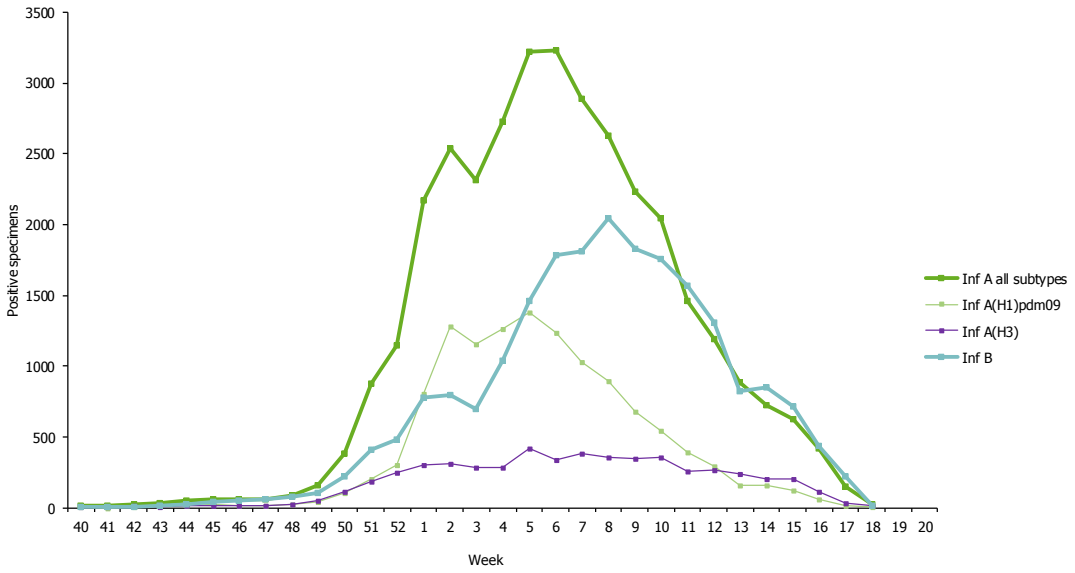


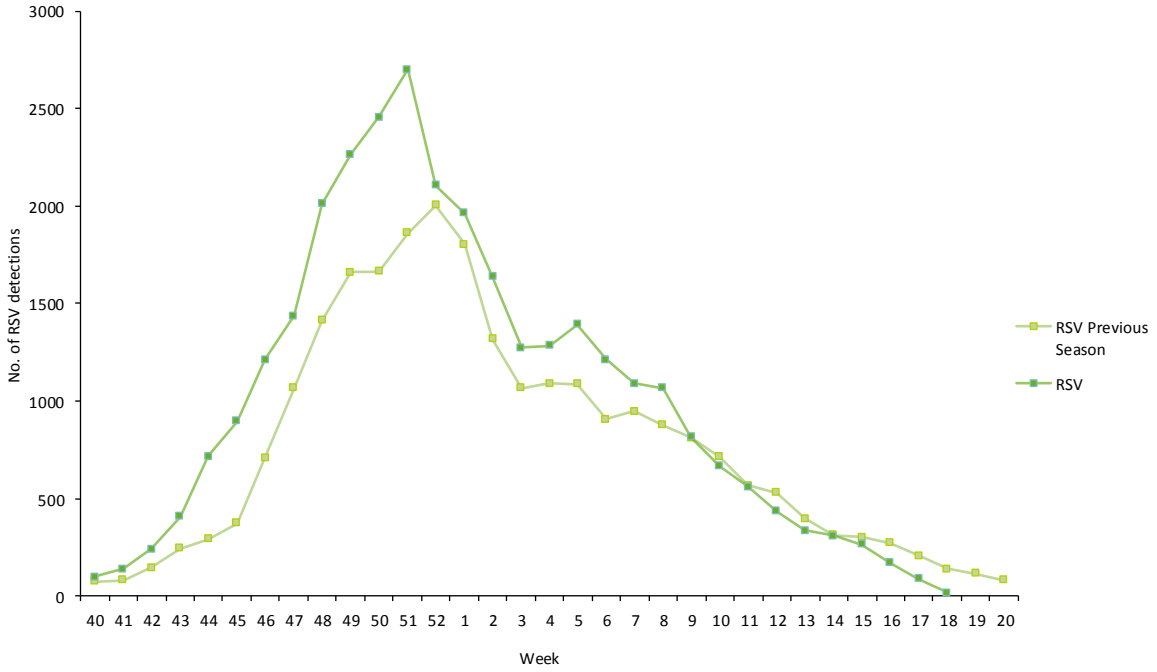
Table 3. Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–18/2013

Antigenic group	Number of viruses
A(H1)pdm09 A/California/7/2009 (H1N1)-like	924
A(H1)pdm09 not attributed to category	11
A(H3) A/Perth/16/2009 (H3N2)-like	2
A(H3) A/Victoria/361/2011 (H3N2)-like	1398
A(H3) not attributed to category	4
B/Brisbane/60/2008-like (B/Victoria/2/87 lineage)	272
B(Vic) lineage not attributed to category	6
B/Estonia/55669/2011-like (B/Yamagata/16/88-lineage)	1290
B/Florida/4/2006-like (B/Yamagata/16/88 lineage)	15
B/Wisconsin/1/2010-like (B/Yamagata/16/88-lineage)	500
B/Bangladesh/3333/2007-like (B/Yamagata/16/88 lineage)	333
B(Yam) lineage not attributed to category	53
Total	**4808**

Table 4. Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–18/2013

Phylogenetic group	Number of viruses
A(H1)pdm09 clade repr. A/California/7/2009	13
A(H1)pdm09 group 6 representative A/St Petersburg/27/2011	384
A(H1)pdm09 group 7 representative A/St Petersburg/100/2011	85
A(H1)pdm09 not attributed to clade/group	9
A(H3) clade repr. A/Victoria/208/2009	56
A(H3) clade repr. A/Victoria/208/2009 – A/Alabama/05/2010 group 5	21
A(H3) clade repr. A/Victoria/208/2009 – A/Iowa/19/2010 group 6	1
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	293
B(Vic) lineage - clade representative B/Brisbane/60/2008	145
B(Yam) lineage - clade repr. B/Bangladesh/3333/2007	280
B(Yam) lineage - clade repr. B/Florida/4/2006	1
B(Yam)-lineage clade repr. B/Wisconsin/1/2010	152
B(Yam)-lineage clade repr. B/Estonia/55669/2011	253
B(Yam)-lineage clade representative B/Brisbane/3/2007	7
B(Yam) lineage - not attributed to clade/group	8
Total	**1709**

Figure 4. Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2012–18/2013



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

For weeks 17–18/2013, two hospitalised laboratory-confirmed influenza cases were reported by Romania. Both cases tested positive for influenza B virus. Since week 40/2012, eight countries have reported 3 273 hospitalised laboratory-confirmed influenza cases, 1 988 (61%) cases were related to influenza type A and 1 285 (39%) to type B. Of 1 230 subtyped influenza A viruses, 836 (68%) were A(H1)pdm09 and 394 (32%) were A(H3) viruses (Table 5).

Of the 3 273 hospitalised laboratory-confirmed influenza cases, 225 had a fatal outcome (Table 6). Of the 143 fatal cases with known vaccination status, 22 (15%) had received the seasonal vaccine.

Table 5. Number of hospitalised laboratory-confirmed influenza cases by influenza type and subtype, week 18/2013 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A		1988
A(H1)pdm09		836
A(H3)		394
A(sub-typing not performed)		758
Influenza B	2	1285
Total	**2**	**3273**

Table 6. Cumulative number of hospitalised laboratory-confirmed influenza cases, weeks 40/2012–18/2013

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	422		14		
France	752		128		
Ireland	430		6		
Romania	113	1.94	21	0.36	5813728
Slovakia	46	0.85	4	0.07	5404322
Spain	494		46		
Sweden	128		6		
United Kingdom	888	1.5			59255492
Total	**3273**		**225**		

Country comments and specific information concerning hospitalised cases and mortality

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

The EuroMOMO mortality monitoring system

Pooled analysis of week 17/2013 data, based on 13 countries or regions, showed a sustained peak of excess all-cause mortality among those aged 65 years and older. Excess mortality started in week 01/2013, peaked in week 10/2013 and has since been declining, but has not yet returned to normal levels. However, excess mortality levels in most recent weeks are difficult to interpret because adjustment for delayed registrations may be imprecise. Further, results of pooled analysis may vary depending on which countries are included in the weekly analysis.

Cumulative winter excess mortality among older people (cumulated from week 40/2012 to week 17/2013) showed excess mortality levels higher than those seen in the past three winters.

The mortality pattern may be explained by the pattern of influenza activity this season in Europe, but other factors such as the long, cold winter may also have contributed.

Pooled analysis was adjusted for variation between the included countries and for differences in the local delay in reporting. Further details are available from: http://www.euromomo.eu/results/pooled.html

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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.