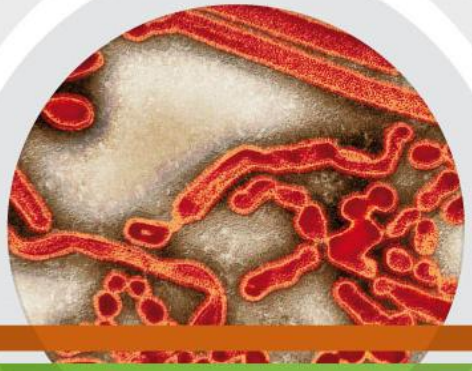


SURVEILLANCE REPORT

Fortnightly influenza surveillance overview

24 May 2013

Main surveillance developments in weeks 19–20/2013 (06–19 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 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 19 and 20/2013, all 25 participating countries reported low-intensity transmission, doing so for the fourth consecutive week.
- The proportion of influenza-positive sentinel specimens (5%) 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%.

The 2012–13 influenza season is now over.

A new seasonal influenza communication toolkit is now freely available on the ECDC website. It contains campaign materials that can be adapted and reused for national communication initiatives to tackle seasonal influenza.

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: Fifteen countries tested 128 sentinel specimens, of which six (5%) were positive for influenza virus. For more information, click here.

Hospital surveillance of influenza laboratory-confirmed cases: Since week 40/2012, 3 286 hospitalised laboratory-confirmed influenza cases have been reported, and 224 of these had a fatal outcome. For more information, click here.

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

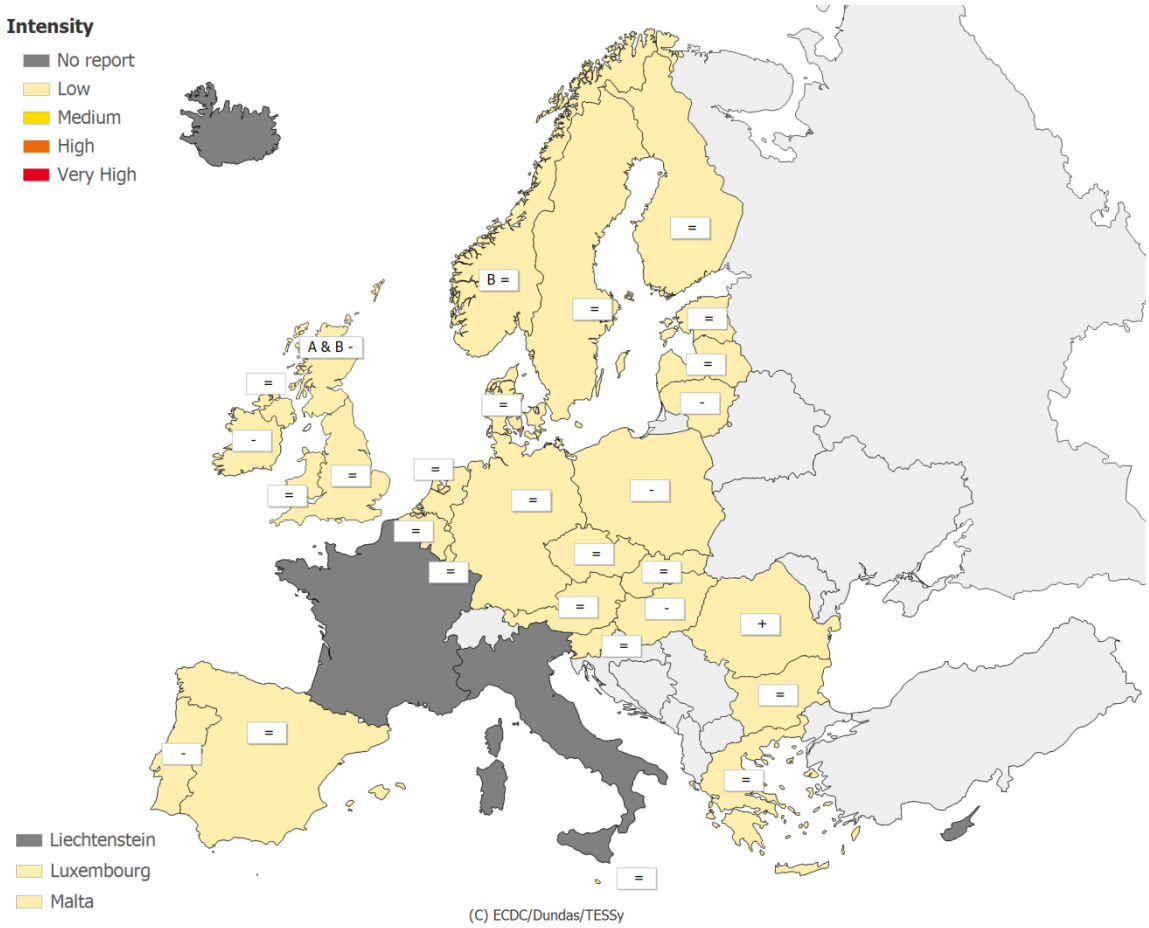
In weeks 19 and 20/2013, all 25 reporting countries experienced low-intensity influenza activity, the lowest reporting category (Table 1, Map 1). Low intensity has now been reported by all countries for four consecutive weeks.

For week 19, geographic patterns of influenza activity were reported as local by Malta and the UK, and by Malta only for week 20/2013 (Table 1, Map 2). For both weeks 19 and 20/2013, all other countries reported no or sporadic activity.

For weeks 19 and 20, most countries reported stable or decreasing trends. In week 20, an increasing trend was reported by Romania, but with low-intensity influenza activity (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 20/2013

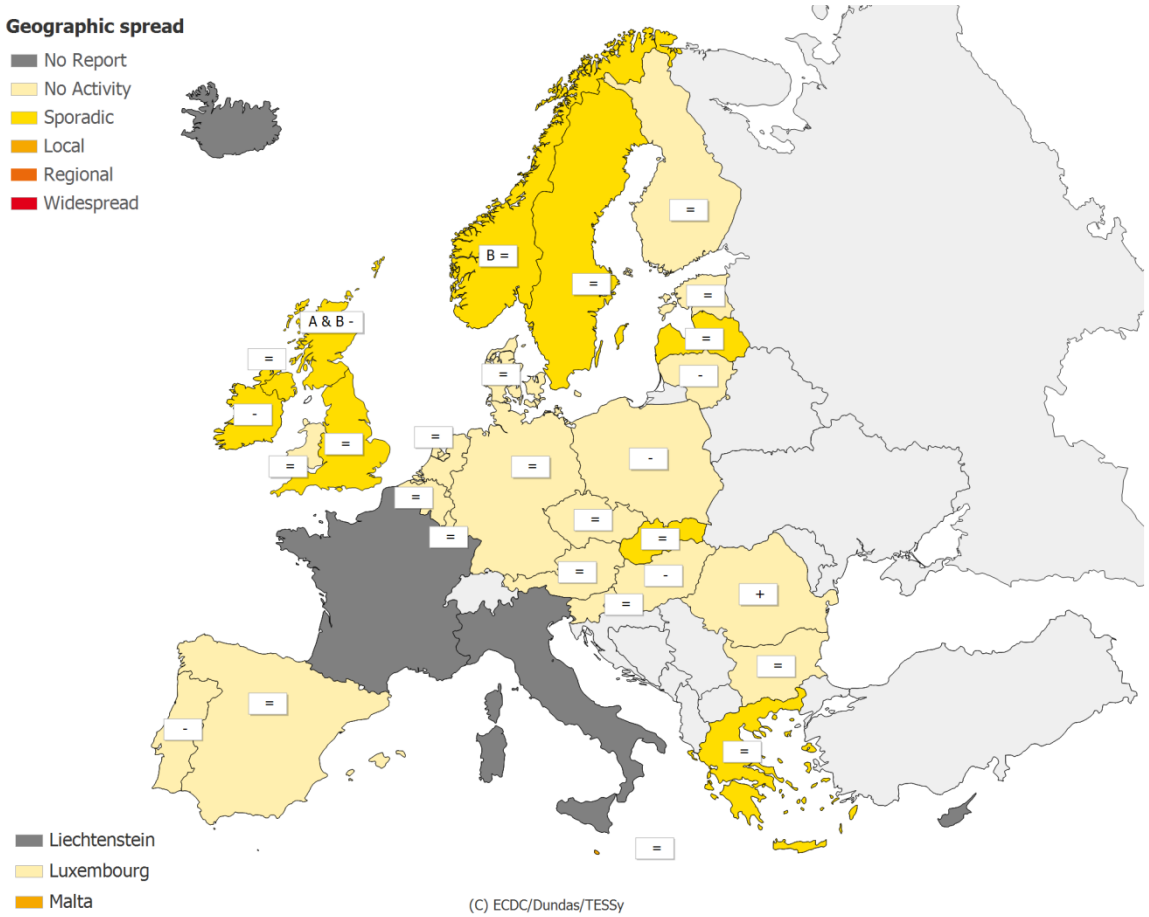


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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	**B**	Type B

Map 2. Geographic spread for week 20/2013



* 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
B	Type B

Table 1. Epidemiological and virological overview by country, weeks 19 –20/2013

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	No activity	Stable	0	None	0.0	-	-	Graphs	Graphs
Belgium	Low	No activity	Stable	1	None	0.0	8.5	1177.4	Graphs	Graphs
Bulgaria	Low	No activity	Stable	0	None	0.0	-	388.1	Graphs	Graphs
Croatia				-	-	0.0	-	-		
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	No activity	Stable	-	-	0.0	14.2	572.6	Graphs	Graphs
Denmark	Low	No activity	Stable	0	None	0.0	6.3	-	Graphs	Graphs
Estonia	Low	No activity	Stable	1	None	0.0	3.7	175.4	Graphs	Graphs
Finland	Low	No activity	Stable	6	None	0.0	-	-	Graphs	Graphs
France				-	-	0.0	-	-		
Germany	Low	No activity	Stable	19	None	10.5	-	674.3	Graphs	Graphs
Greece	Low	Sporadic	Stable	3	None	0.0	23.8	-	Graphs	Graphs
Hungary	Low	No activity	Decreasing	4	None	0.0	10.3	-	Graphs	Graphs
Iceland				0	-	0.0	-	-	Graphs	Graphs
Ireland	Low	Sporadic	Decreasing	5	None	0.0	2.3	-	Graphs	Graphs
Italy				-	-	0.0	-	-		
Latvia	Low	Sporadic	Stable	0	None	0.0	2.1	493.2	Graphs	Graphs
Lithuania	Low	No activity	Decreasing	4	None	50.0	1.0	347.8	Graphs	Graphs
Luxembourg	Low	No activity	Stable	3	None	0.0	-*	-*	Graphs	Graphs
Malta	Low	Local	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Netherlands	Low	No activity	Stable	7	None	0.0	17.3	-	Graphs	Graphs
Norway	Low	Sporadic	Stable	1	B	100.0	25.8	-	Graphs	Graphs
Poland	Low	No activity	Decreasing	0	None	0.0	113.3	-	Graphs	Graphs
Portugal	Low	No activity	Decreasing	0	None	0.0	0.0	-	Graphs	Graphs
Romania	Low	No activity	Increasing	0	None	0.0	0.5	430.0	Graphs	Graphs
Slovakia	Low	Sporadic	Stable	0	None	0.0	63.3	942.7	Graphs	Graphs
Slovenia	Low	No activity	Stable	3	None	0.0	0.0	586.5	Graphs	Graphs
Spain	Low	No activity	Stable	23	None	4.3	5.3	-	Graphs	Graphs
Sweden	Low	Sporadic	Stable	2	None	0.0	0.6	-	Graphs	Graphs
UK - England	Low	Sporadic	Stable	17	-	0.0	4.5	231.3	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Stable	2	None	0.0	9.3	305.2	Graphs	Graphs
UK - Scotland	Low	Sporadic	Decreasing	27	A & B	0.0	5.6	352.0	Graphs	Graphs
UK - Wales	Low	No activity	Stable	0	None	0.0	3.0	-	Graphs	Graphs
Europe				**128**		**4.7**				**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 weeks 19 and 20/2013, 15 countries tested 128 sentinel specimens, of which six (5%) were positive for influenza virus. Of those six influenza viruses, one was type A and five type B (Tables 1–2, Figure 1).

In addition, 223 non-sentinel-source specimens (e.g. specimens collected for diagnostic purposes in hospitals) were found to be positive for influenza virus, of which 102 (46%) were type A and 121 (54%) type B (Table 2).

Of the 15 386 influenza virus detections in sentinel specimens since week 40/2012, 7 177 (47%) were type A and 8 209 (53%) were type B viruses. Of 6 389 influenza A viruses subtyped, 3 976 (62%) were A(H1)pdm09 and 2 413 (38%) were A(H3) (Table 2, Figure 2). Of the 2 999 type B viruses ascribed to lineage, 2 713 (90%) were Yamagata and 286 (10%) Victoria (Table 2).

Since week 40/2012, 4 969 antigenic characterisations of influenza viruses have been reported for sentinel and non-sentinel specimens. Of the 2 415 antigenic characterisations of influenza A viruses reported, 1 422 (59%) have been characterised as A/Victoria/361/2011(H3N2)-like and 974 (40%) as A(H1)pdm09 A/California/7/2009(H1N1)-like. Of the 2 554 antigenic characterisations of influenza B viruses reported, 1 334 (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, 1 783 genetic characterisations of influenza viruses have been reported for sentinel and non-sentinel specimens. Of the 509 A(H1)pdm09 viruses characterised, 400 (79%) belonged to genetic group 6 represented by A/St Petersburg/27/2011. Of the 390 A(H3) viruses characterised, 311 (80%) 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 April report prepared by the Community Network of Reference Laboratories (CNRL) coordination team. The viruses circulating 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 1 374 viruses have been tested for antiviral susceptibility, as reported by Denmark, Germany, Greece, Ireland, 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 by oseltamivir. One A(H1N1)pdm09 virus showed the Y155H substitution that previously has been associated with highly reduced inhibition by oseltamivir and zanamivir in seasonal A(H1N1) virus. One A(H3N2) virus showed the D151N substitution previously associated with reduced inhibition by oseltamivir and zanamivir. One type B virus showed reduced inhibition by oseltamivir and normal inhibition by zanamivir, associated with the I221T substitution. None of the remaining 602 A(H1N1)pdm09 viruses, 349 A(H3N2) and 398 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 19 and 20/2013, 12 countries reported 56 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 40/2012–20/2013

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	1	102	7177	34738
A(H1)pdm09	0	13	3976	12320
A(H3)	0	17	2413	5577
A(sub-type unknown)	1	72	788	16841
Influenza B	5	121	8209	21711
B(Vic) lineage	0	0	286	182
B(Yam) lineage	3	5	2713	2384
Unknown lineage	2	116	5210	19145
Total influenza	**6**	**223**	**15386**	**56449**

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 40/2012–20/2013

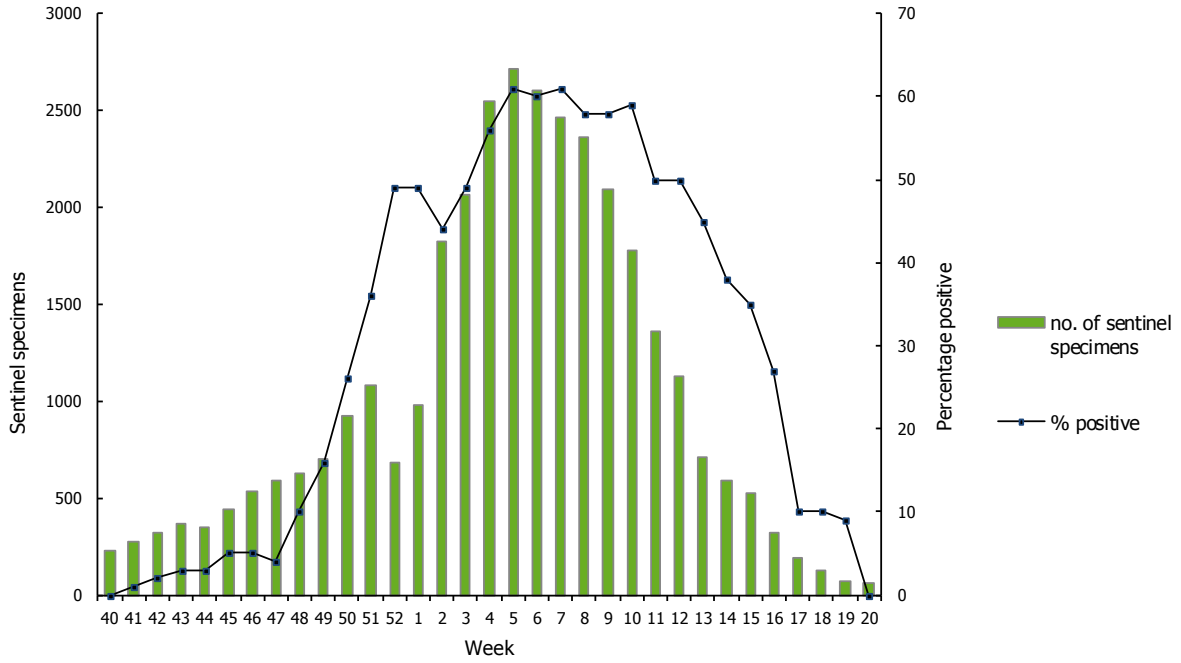


Figure 2. Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40/2012–20/2013

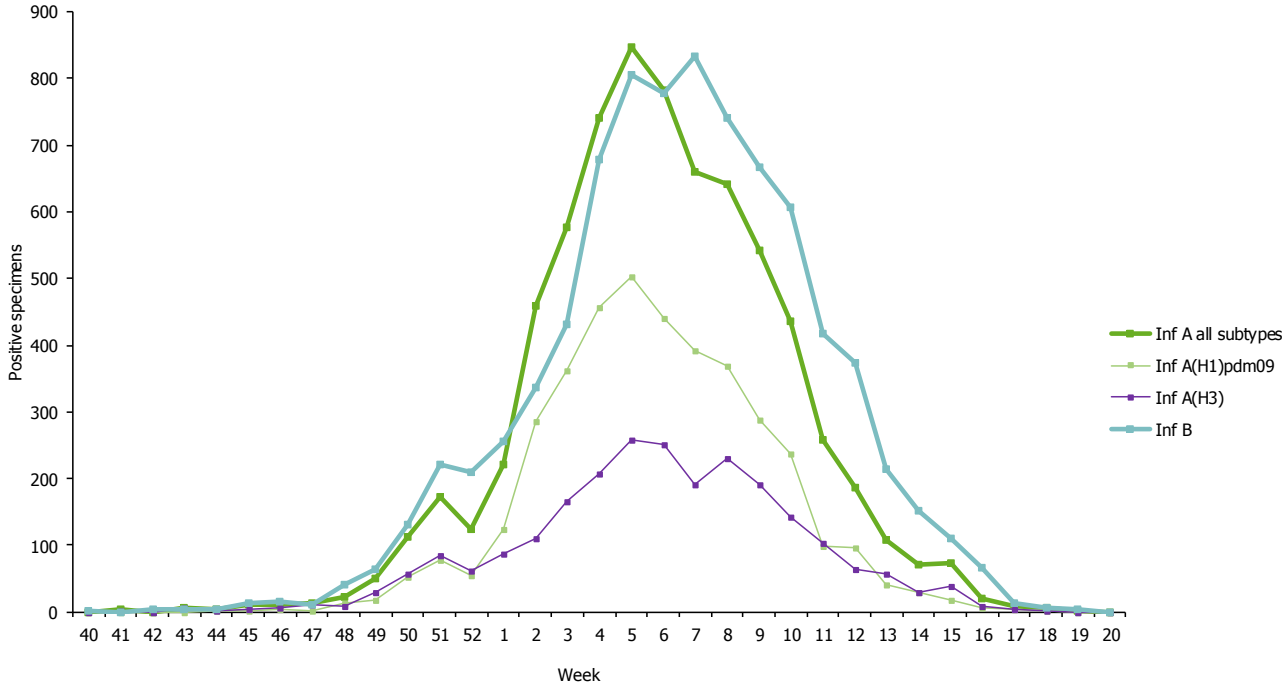


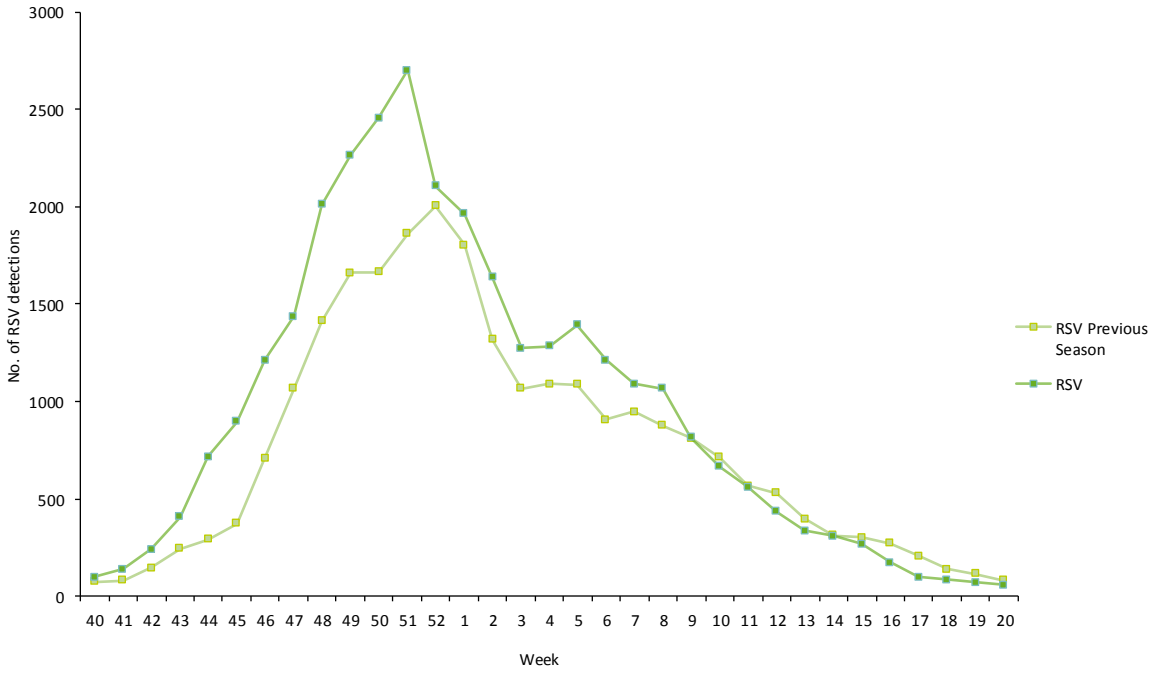
Table 3. Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–20/2013

Antigenic group	Number of viruses
A(H1)pdm09 A/California/7/2009 (H1N1)-like	974
A(H1)pdm09 not attributed to category	13
A(H3) A/Perth/16/2009 (H3N2)-like	2
A(H3) A/Victoria/361/2011 (H3N2)-like	1422
A(H3) not attributed to category	4
B/Brisbane/60/2008-like (B/Victoria/2/87 lineage)	276
B(Vic) lineage not attributed to category	14
B/Estonia/55669/2011-like (B/Yamagata/16/88-lineage)	1334
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	82
Total	**4969**

Table 4. Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–20/2013

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	400
A(H1)pdm09 group 7 representative A/St Petersburg/100/2011	87
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	311
B(Vic) lineage - clade representative B/Brisbane/60/2008	151
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	164
B(Yam)-lineage clade repr. B/Estonia/55669/2011	273
B(Yam)-lineage clade representative B/Brisbane/3/2007	7
B(Yam) lineage - not attributed to clade/group	8
Total	**1783**

Figure 4. Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2012–20/2013



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 19–20/2013, 11 hospitalised laboratory-confirmed influenza cases were reported by Ireland, Romania and Sweden. Since week 40/2012, eight countries have reported 3 386 hospitalised laboratory-confirmed influenza cases, 2 075 (61%) cases were related to influenza type A and 1 311 (39%) to type B. Of 1 292 subtyped influenza A viruses, 870 (67%) were A(H1)pdm09 and 422 (33%) were A(H3) viruses (Table 5).

Of the 3 386 hospitalised laboratory-confirmed influenza cases, 224 had a fatal outcome (Table 6). Of the 145 fatal cases with known vaccination status, 25 (17%) had received the seasonal vaccine.

Table 5. Number of hospitalised laboratory-confirmed influenza cases by influenza type and subtype, weeks 19-20/2013 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season	Cumulative number of fatal cases since the start of the season
Influenza A	8	2075	148
A(H1)pdm09	2	870	76
A(H3)	3	422	20
A(sub-typing not performed)	3	783	52
Influenza B	3	1311	76
Total	**11**	**3386**	**224**

Table 6. Cumulative number of hospitalised laboratory-confirmed influenza cases, weeks 40/2012–20/2013

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	462		6		
Romania	116	2	21	0.36	5813728
Slovakia	46	0.85	4	0.07	5404322
Spain	521		51		
Sweden	133				
United Kingdom	934	1.58			59255493
Total	**3386**		**224**		

The EuroMOMO mortality monitoring system

Pooled analysis of week 20/2013 data, based on 14 countries or regions, showed a sustained winter 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, but has since week 17/2013 been around normal levels. Cumulative winter excess mortality among older people (cumulated from week 40/2012 to week 19/2013) 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 on 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.