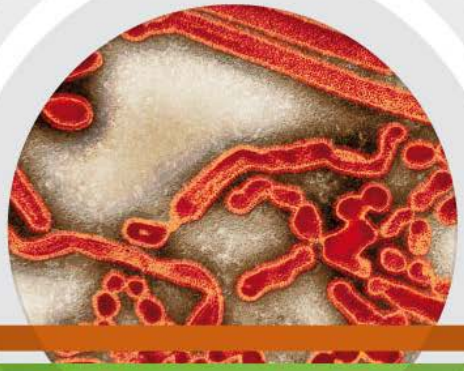


SURVEILLANCE REPORT

Weekly influenza surveillance overview

15 March 2013

Main surveillance developments in week 10/2013 (4–10 March 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. Active influenza transmission began around week 49/2012, approximately six weeks earlier than in the 2011/2012 season and still remains high.

- In week 10/2013, the geographic pattern of influenza activity was reported as widespread by 18 countries, 16 of which also reported high/medium intensity.
- Although the proportion of influenza virus-positive sentinel specimens has continued to decrease since the peak observed in week 5/2013 (61%), it remained high in week 10/2013 (54%), indicating substantial influenza activity.
- Since week 40/2012, 48% of sentinel specimens positive for influenza virus have been of type A and 52% of type B. The proportion of A(H1)pdm09 has remained at about 60% of subtyped type A viruses since week 7/2013.
- For week 10/2013, 78 hospitalised laboratory-confirmed influenza cases were reported by Belgium, France, Ireland, Romania, Slovakia and Spain. Since week 40/2012, 2 311 hospitalised laboratory-confirmed influenza cases have been reported by eight countries.
- ECDC published its annual risk assessment for seasonal influenza 2012-13 in early February based on data up to week 3/2013.

In week 10/2013, influenza activity remained substantial across Europe, but an increasing number of countries reported indications of declining transmission.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Twenty-one countries reported high or medium intensity. For more information, **click here**.

Virological surveillance: Twenty-six countries reported virological data. Fifty-four percent of sentinel specimens tested positive for influenza virus. For more information, **click here**.

Hospital surveillance of influenza laboratory-confirmed cases: Of the 2 311 hospitalised laboratory-confirmed influenza cases reported since week 40/2012, 56% were related to influenza type A and 44% to type B. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

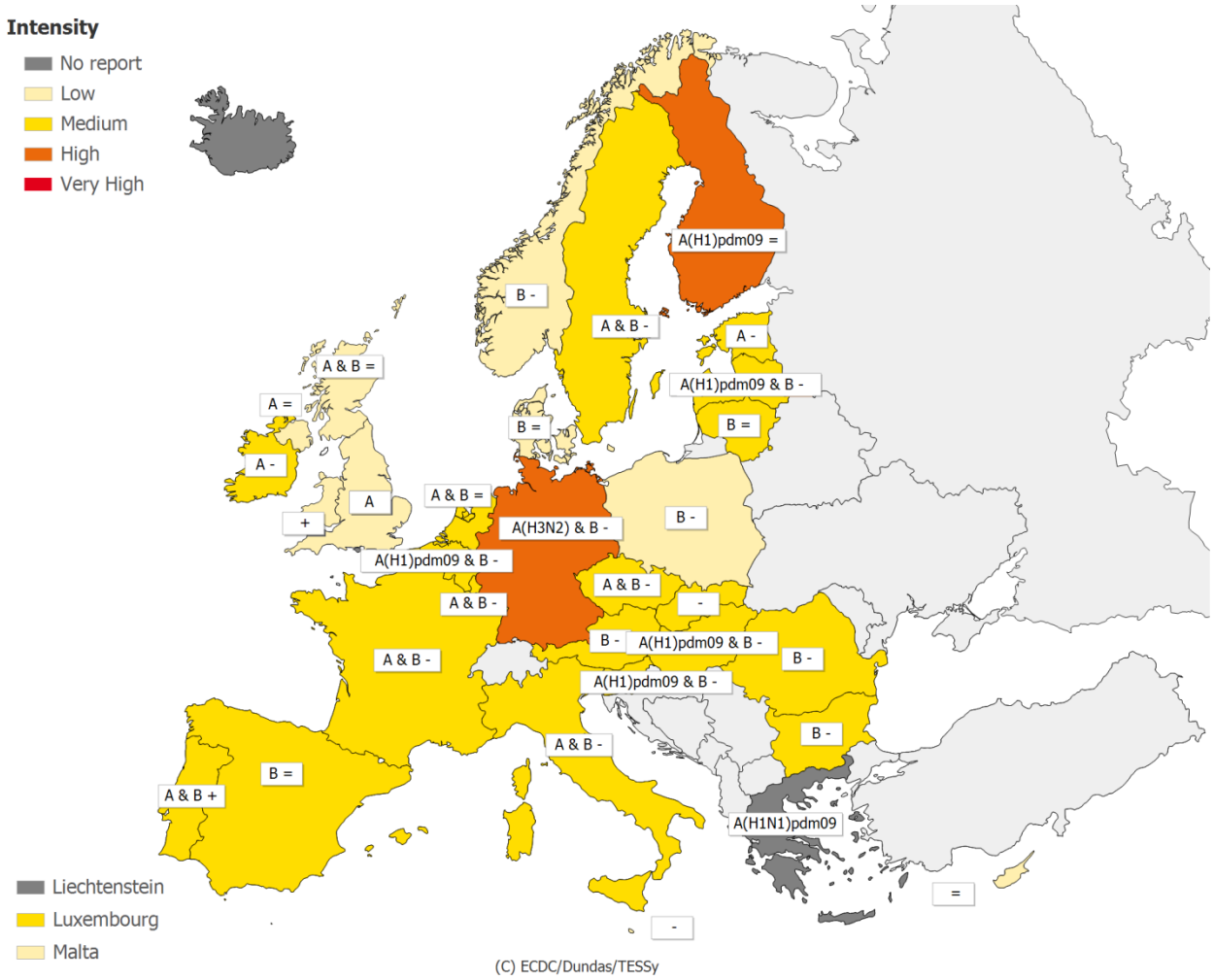
Weekly analysis – epidemiology

For week 10/2013, 27 countries reported clinical data. As for week 9/2013, only Finland and Germany reported high intensity, whilst 19 countries reported medium intensity. Cyprus, Denmark, Malta, Norway, Poland and the UK reported low intensity (Table 1, Map 1).

The geographic pattern of influenza activity was reported as widespread by 18 countries, 16 of which also reported high/medium intensity. Regional or local activity was reported by seven countries and as for week 9/2013, only Cyprus and Poland reported no activity (Table 1, Map 2).

Increasing trends were reported by Portugal and the UK (Wales), while stable or decreasing trends were reported by all other reporting countries (Table 1, Map 2).

Map 1. Intensity for week 10/2013



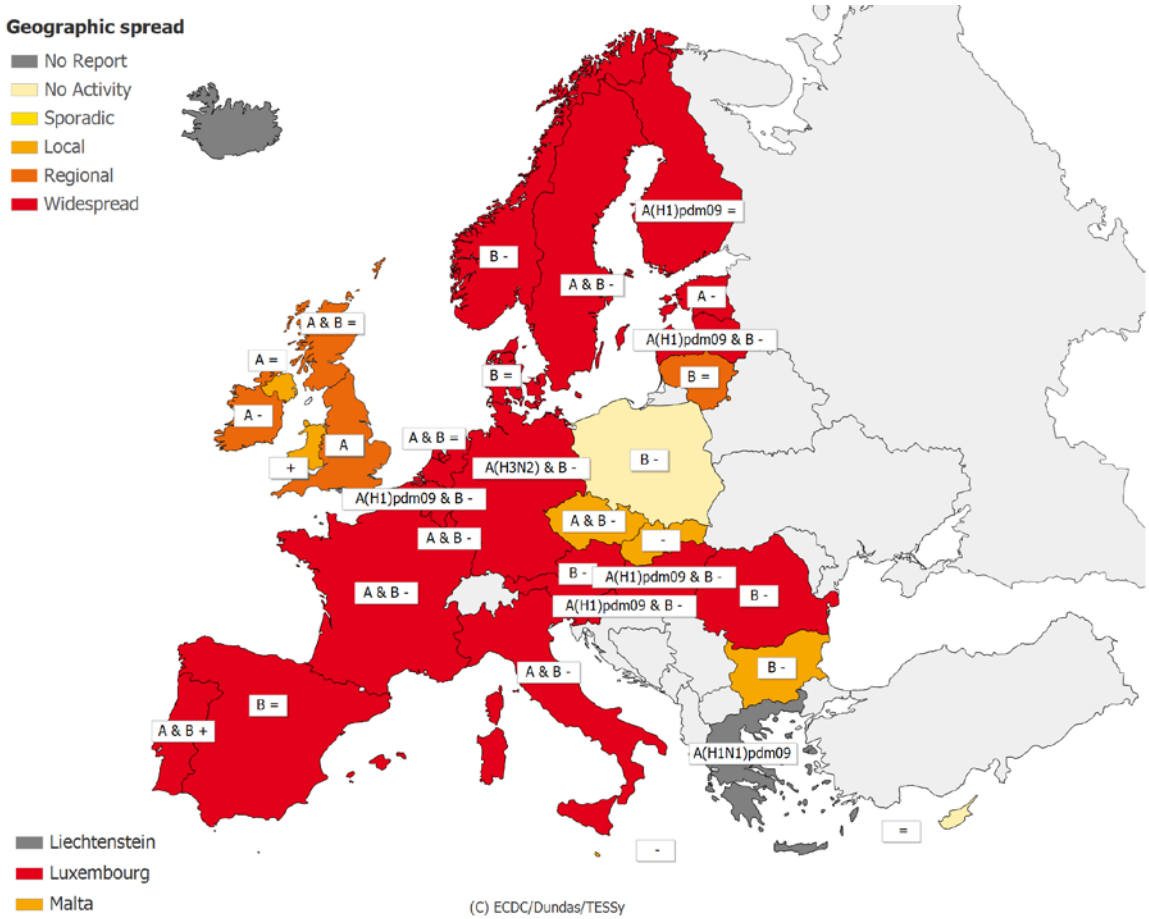
* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

Legend:

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

Map 2. Geographic spread for week 10/2013



* 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	Type A
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(H3N2) & B	Type B and Type A, Subtype H3N2
B	Type B

Table 1. Epidemiological and virological overview by country, week 10/2013

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	Decreasing	55	B	67.3	1330.4	-	Graphs	Graphs
Belgium	Medium	Widespread	Decreasing	55	A(H1)pdm09 & B	67.3	445.3	1895.6	Graphs	Graphs
Bulgaria	Medium	Local	Decreasing	7	B	71.4	-	1139.5	Graphs	Graphs
Cyprus	Low	No activity	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic	Medium	Local	Decreasing	17	A & B	64.7	99.0	1078.0	Graphs	Graphs
Denmark	Low	Widespread	Stable	12	B	50.0	129.2	-	Graphs	Graphs
Estonia	Medium	Widespread	Decreasing	34	A	44.1	27.2	553.5	Graphs	Graphs
Finland	High	Widespread	Stable	49	A(H1)pdm09	57.1	-	-	Graphs	Graphs
France	Medium	Widespread	Decreasing	152	A & B	56.6	-	1889.2	Graphs	Graphs
Germany	High	Widespread	Decreasing	234	A(H3N2) & B	53.8	-	1896.2	Graphs	Graphs
Greece				24	A(H1N1)pdm09	50.0	-	-	Graphs	Graphs
Hungary	Medium	Widespread	Decreasing	63	A(H1)pdm09 & B	50.8	296.0	-	Graphs	Graphs
Iceland				0	-	0.0	-	-	Graphs	Graphs
Ireland	Medium	Regional	Decreasing	25	A	56.0	34.9	-	Graphs	Graphs
Italy	Medium	Widespread	Decreasing	88	A & B	61.4	550.2	-	Graphs	Graphs
Latvia	Medium	Widespread	Decreasing	3	A(H1)pdm09 & B	66.7	345.9	1173.1	Graphs	Graphs
Lithuania	Medium	Regional	Stable	28	B	78.6	39.4	616.9	Graphs	Graphs
Luxembourg	Medium	Widespread	Decreasing	40	A & B	50.0	-*	-*	Graphs	Graphs
Malta	Low	Local	Decreasing	-	-	0.0	-*	-*	Graphs	Graphs
Netherlands	Medium	Widespread	Stable	41	A & B	63.4	109.2	-	Graphs	Graphs
Norway	Low	Widespread	Decreasing	2	B	50.0	93.7	-	Graphs	Graphs
Poland	Low	No activity	Decreasing	62	B	30.6	299.3	-	Graphs	Graphs
Portugal	Medium	Widespread	Increasing	25	A & B	68.0	71.0	-	Graphs	Graphs
Romania	Medium	Widespread	Decreasing	17	B	70.6	7.4	897.8	Graphs	Graphs
Slovakia	Medium	Local	Decreasing	19	None	84.2	287.3	1898.3	Graphs	Graphs
Slovenia	Medium	Widespread	Decreasing	34	A(H1)pdm09 & B	76.5	54.5	1328.0	Graphs	Graphs
Spain	Medium	Widespread	Stable	374	B	48.1	171.9	-	Graphs	Graphs
Sweden	Medium	Widespread	Decreasing	45	A & B	40.0	18.3	-	Graphs	Graphs
UK - England	Low	Regional	Stable	68	A	39.7	-	-	Graphs	Graphs
UK - Northern Ireland	Low	Local	Stable	4	A	75.0	46.3	470.5	Graphs	Graphs
UK - Scotland	Low	Regional	Stable	30	A & B	40.0	23.9	508.5	Graphs	Graphs
UK - Wales	Low	Local	Increasing	-	-	0.0	18.1	-	Graphs	Graphs
Europe				**1607**		**53.8**				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.

Country comments

Portugal: one of the laboratory-confirmed cases was co-infected with an A(H1N1)pdm09 and a B virus.

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 week 10/2013, 26 countries tested 1 607 sentinel specimens, of which 864 (54%) were positive for influenza virus. Even though it has been continuously decreasing since the peak of 61% in week 5/2013, the percentage of positive specimens still remains above 50%, indicating high influenza activity. Of the 864 detected viruses, 371 (43%) were type A and 493 (57%) type B (Tables 1–2, Figure 1).

In addition, 3 168 non-sentinel source specimens (e.g. specimens collected for diagnostic purposes in hospitals) were found to be positive for influenza virus, 1 694 (53%) of which were type A and 1 474 (47%) were type B (Table 2).

Of the 12 923 influenza virus detections in sentinel specimens since week 40/2012, 6 259 (48%) were type A, and 6 664 (52%) were type B viruses. Of 5 563 influenza A viruses subtyped, 3 547 (64%) were A(H1)pdm09 and 2 016 (36%) were A(H3) (Table 2, Figure 2). Following a constant increase since week 2/2013, the proportion of A(H1)pdm09 has remained similar since week 7/2013. Of the 1 811 type B viruses ascribed to lineage, 1 636 (90%) were Yamagata and 175 (10%) Victoria (Table 2).

Of the 1 661 antigenic characterisations of influenza A viruses reported for sentinel and non-sentinel specimens since week 40/2012, the majority (68%) have been characterised as A/Victoria/361/2011(H3N2)-like. Of the 1 423 antigenic characterisations of influenza B viruses reported, 637 (45%) have been characterised as B/Estonia/55669/2011-like (B/Yamagata/16/88-lineage) and 325 (23%) as B/Wisconsin/1/2010-like (B/Yamagata/16/88-lineage) (Table 3).

Since week 40/2012, 1 223 genetic characterisations of influenza viruses were reported for sentinel and non-sentinel specimens. Of the 361 A(H1)pdm09 viruses characterised, the majority (63%) were A(H1)pdm09 group 6 representative A/St Petersburg/27/2011. Of the 292 A(H3) viruses characterised, the majority (75%) were A(H3) clade representative A/Victoria/208/2009, falling within genetic group 3C, represented by A/Victoria/361/2011 (Table 4).

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

Since week 40/2012, a total of 736 viruses have been tested for antiviral susceptibility and reported by Denmark, Germany, Greece, the Netherlands, Norway, Portugal, Romania, Spain, Sweden and the UK. Six A(H1N1)pdm09 viruses tested for neuraminidase inhibitor susceptibility showed the H275Y amino acid substitution associated with oseltamivir highly reduced inhibition. Two were identified in immunocompromised patients in the Netherlands, two in hospitalised oseltamivir-treated patients in Germany and two in untreated outpatients in the UK. One A(H3N2) virus from Sweden showed the D151N substitution previously associated with reduced inhibition by oseltamivir and zanamivir. No data on immune status or antiviral drug exposure were reported for this patient. One type B virus from an outpatient not exposed to antivirals showed reduced inhibition by oseltamivir and normal inhibition by zanamivir, associated with the I221T substitution. None of the other 281 A(H1N1)pdm09 viruses, 194 A(H3N2) and 242 B viruses tested for neuraminidase inhibitor susceptibility showed genetic or phenotypic (IC_{50}) evidence for (highly) reduced inhibition. Twenty-three A(H1N1)pdm09 and 19 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 10/2013, 19 countries reported 587 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 40/2012–10/2013

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	371	1694	6259	28166
A(H1)pdm09	174	468	3547	10720
A(H3)	117	173	2016	3739
A(sub-type unknown)	80	1053	696	13707
Influenza B	493	1474	6664	14941
B(Vic) lineage	14	9	175	129
B(Yam) lineage	130	47	1636	1451
Unknown lineage	349	1418	4853	13361
Total influenza	**864**	**3168**	**12923**	**43107**

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 40/2012–10/2013

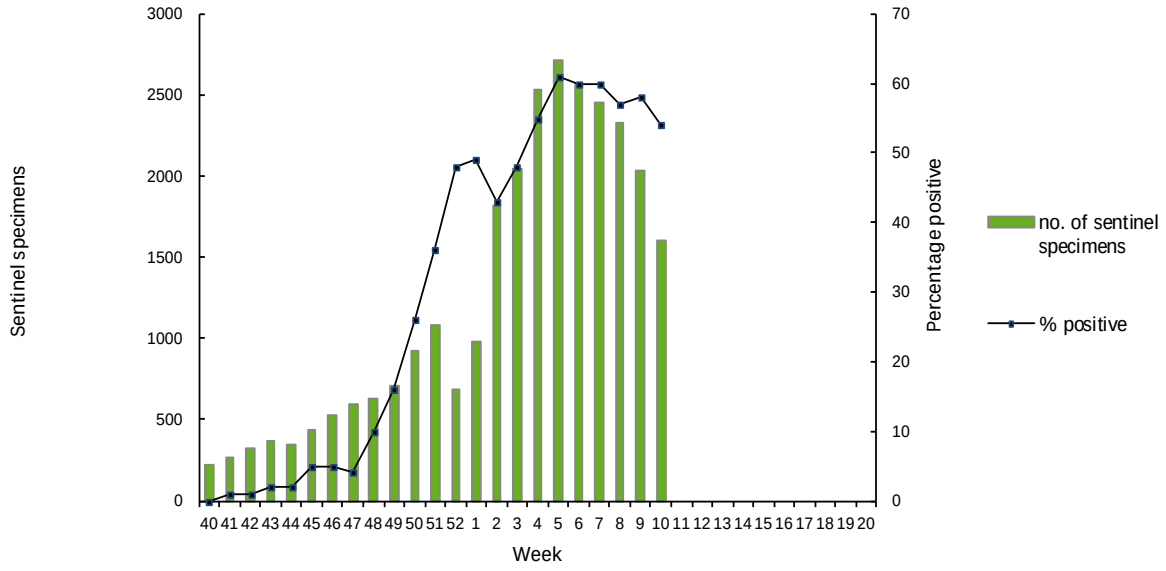


Figure 2. Number of sentinel specimens positive for influenza virus, by type, subtype and week of report, weeks 40/2012–10/2013

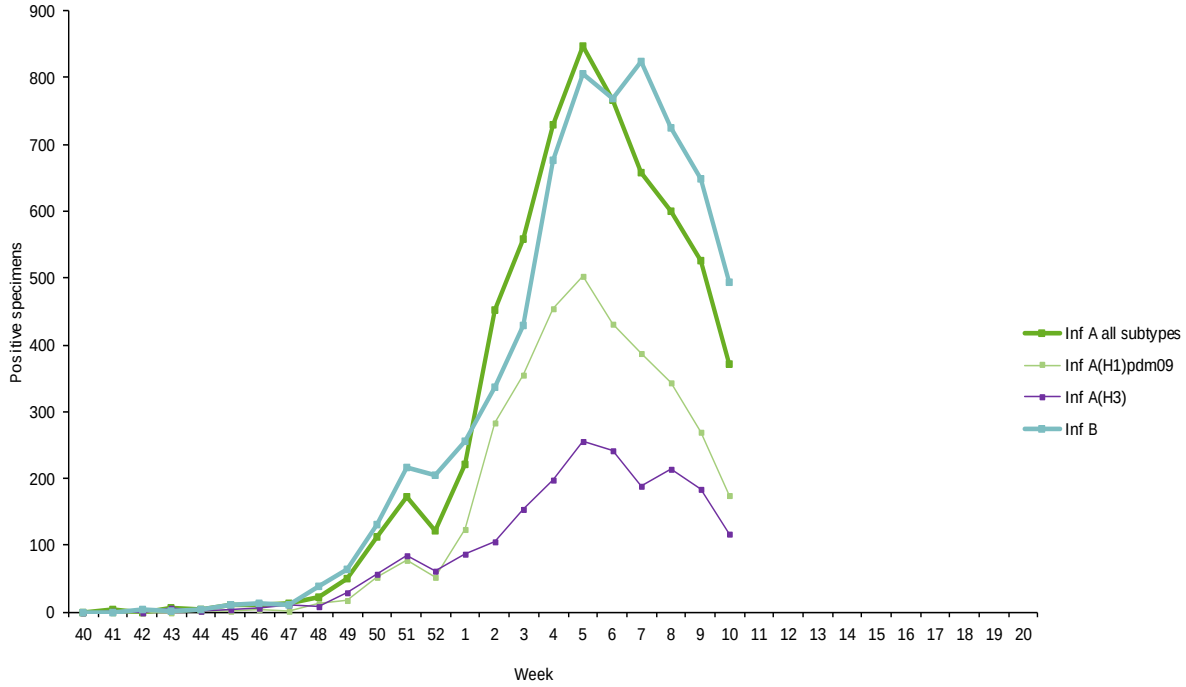


Figure 3. Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2012–10/2013

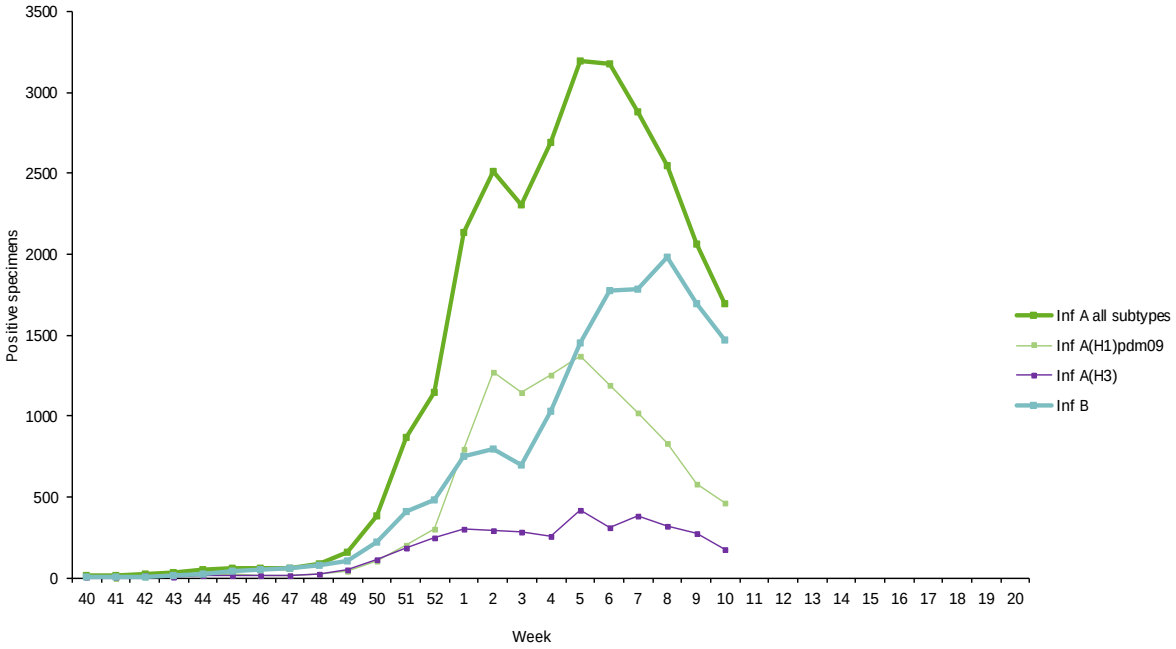


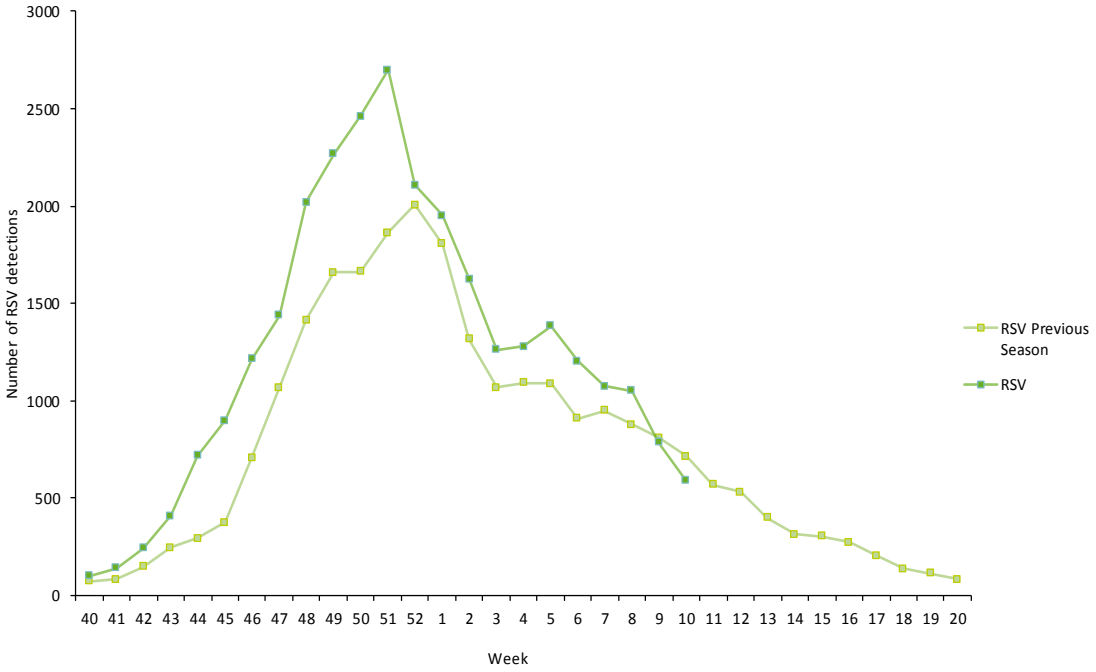
Table 3. Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–10/2013

Antigenic group	Number of viruses
A(H1)pdm09 A/California/7/2009 (H1N1)-like	523
A(H1)pdm09 not attributed to category	6
A(H3) A/Perth/16/2009 (H3N2)-like	2
A(H3) A/Victoria/361/2011 (H3N2)-like	1126
A(H3) not attributed to category	4
B/Brisbane/60/2008-like (B/Victoria/2/87 lineage)	172
B(Vic) lineage not attributed to category	3
B/Estonia/55669/2011-like (B/Yamagata/16/88-lineage)	637
B/Florida/4/2006-like (B/Yamagata/16/88 lineage)	8
B/Wisconsin/1/2010-like (B/Yamagata/16/88-lineage)	325
B/Bangladesh/3333/2007-like (B/Yamagata/16/88 lineage)	250
B(Yam) lineage not attributed to category	28

Table 4. Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–10/2013

Phylogenetic group	Number of viruses
A(H1)pdm09 clade repr. A/California/7/2009	69
A(H1)pdm09 group 6 representative A/St Petersburg/27/2011	227
A(H1)pdm09 group 7 representative A/St Petersburg/100/2011	58
A(H1)pdm09 not attributed to clade/group	7
A(H3) clade repr. A/Victoria/208/2009	53
A(H3) clade repr. A/Victoria/208/2009 – A/Alabama/05/2010 group 5	20
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	218
B(Vic) lineage - clade representative B/Brisbane/60/2008	102
B(Yam) lineage - clade repr. B/Bangladesh/3333/2007	213
B(Yam)-lineage clade repr. B/Wisconsin/1/2010	93
B(Yam)-lineage clade repr. B/Estonia/55669/2011	155
B(Yam)-lineage clade representative B/Brisbane/3/2007	7

Figure 4. Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2012–10/2013



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

In week 10/2013, 78 hospitalised laboratory-confirmed influenza cases were reported by Belgium, France, Ireland, Romania, Slovakia and Spain (Table 5). Four fatal cases were reported by France.

Of the 2 311 hospitalised laboratory-confirmed influenza cases reported since week 40/2012, 1 303 (56%) were related to influenza type A and 1 005 (44%) to type B. Of 769 subtyped influenza A viruses, 531 (69%) were A(H1)pdm09 and 238 (31%) were A(H3) viruses (Table 5).

Since week 40/2012, 2 311 hospitalised laboratory-confirmed influenza cases, including 135 with fatal outcome, have been reported by eight countries (Table 6). Of the 87 fatal cases with known vaccination status, twelve had received the seasonal vaccine.

Table 5. Number of hospitalised laboratory-confirmed influenza cases by influenza type and subtype, week 10/2013 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	52	1303
A(H1)pdm09	19	531
A(H3)	6	238
A(sub-typing not performed)	27	537
Influenza B	26	1005
Total	**78**	**2311**

Table 6. Cumulative number of hospitalised laboratory-confirmed influenza cases and fatalities, weeks 40/2012–10/2013

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	306		6		
France	615		87		
Ireland	268		2		
Romania	71	1.22	9	0.15	5813728
Slovakia	44	0.81	3	0.06	5408148
Spain	277		23		
Sweden	82		5		
United Kingdom	648	1.09			59255492
Total	**2311**		**135**		

The EUROMOMO mortality monitoring system:

Pooled analysis of week 10/2013 data, based on 14 countries or regions, showed excess mortality among people aged 65 and older since week 1/2013: all-cause mortality was around 3 z-scores above the baseline in weeks 1-4/2013, and around 4 to 5 z-scores in weeks 5-9/2013. However, mortality in the most recent weeks may be overestimated because of imprecise adjustment for delayed registrations.

No excess mortality in younger age groups has been detected so far this season. Results of pooled analysis may vary depending on which countries are included in the weekly analysis.

Individual country analysis showed a diverse temporal pattern of all-cause mortality in people aged 65 years and above. While in some countries mortality increased at the end of 2012 (Denmark, Ireland, Sweden and the UK (England, Scotland)), the increases observed in other countries started around four weeks later (France and the Netherlands). Meanwhile, some countries had only very moderate mortality increases (i.e. to around 2 z-scores above the baseline) or none so far (Belgium, Finland, Germany (Berlin, Hesse), Portugal, Spain)

The highest excess mortality with peak values of around 6 z-scores has been observed in Denmark, where influenza activity has been dominated by A(H3N2) circulation.

The diverse mortality pattern may be explained by the pattern of influenza activity this season in Europe, but other factors such as extreme cold may also play a role.

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.