

SURVEILLANCE REPORT

Weekly influenza surveillance overview

8 March 2013

Main surveillance developments in week 9/2013 (25 February–3 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 but active influenza transmission began around week 49/2012, approximately six weeks earlier than in the 2011/2012 season.

- For week 9/2013, 19 of 27 countries reporting indicated concomitantly high/medium-intensity transmission and wide geographic spread. Only two countries reported increasing trends in influenza-like illness compared to six in week 8 and 11 in week 7. Of the 18 countries that reported decreasing trends, five did so for the first time since the beginning of influenza transmission this season.
- The proportion of influenza-positive cases among sentinel specimens remained high (54%), but has continued to decrease since the peak observed in week 5/2013 (61%).
- Since week 40/2012, a broadly even distribution of influenza virus types has been observed among sentinel samples, with approximately 50% each for type A and type B viruses. After increasing from week 2/2013, the proportion of A(H1)pdm09 has remained unchanged since week 7/2013 at about 60% of subtyped type A viruses.
- A total of 154 hospitalised laboratory-confirmed influenza cases were reported by eight countries (Belgium, France, Ireland, Romania, Slovakia, and Spain).
- ECDC published its annual [risk assessment](#) for seasonal influenza 2012-13 in early February based on data up to week 3/2013.

In week 9/2013, 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): Nineteen countries reported concomitantly high/medium-intensity transmission and wide geographic spread. For more information, [click here](#).

Virological surveillance: Twenty-five countries tested 1 819 sentinel specimens, of which 977 (54%) were positive for influenza virus. For more information, [click here](#).

Hospital surveillance of influenza laboratory-confirmed cases: A total of 154 hospitalised laboratory-confirmed influenza cases were reported, with three fatalities. For more information, [click here](#).

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

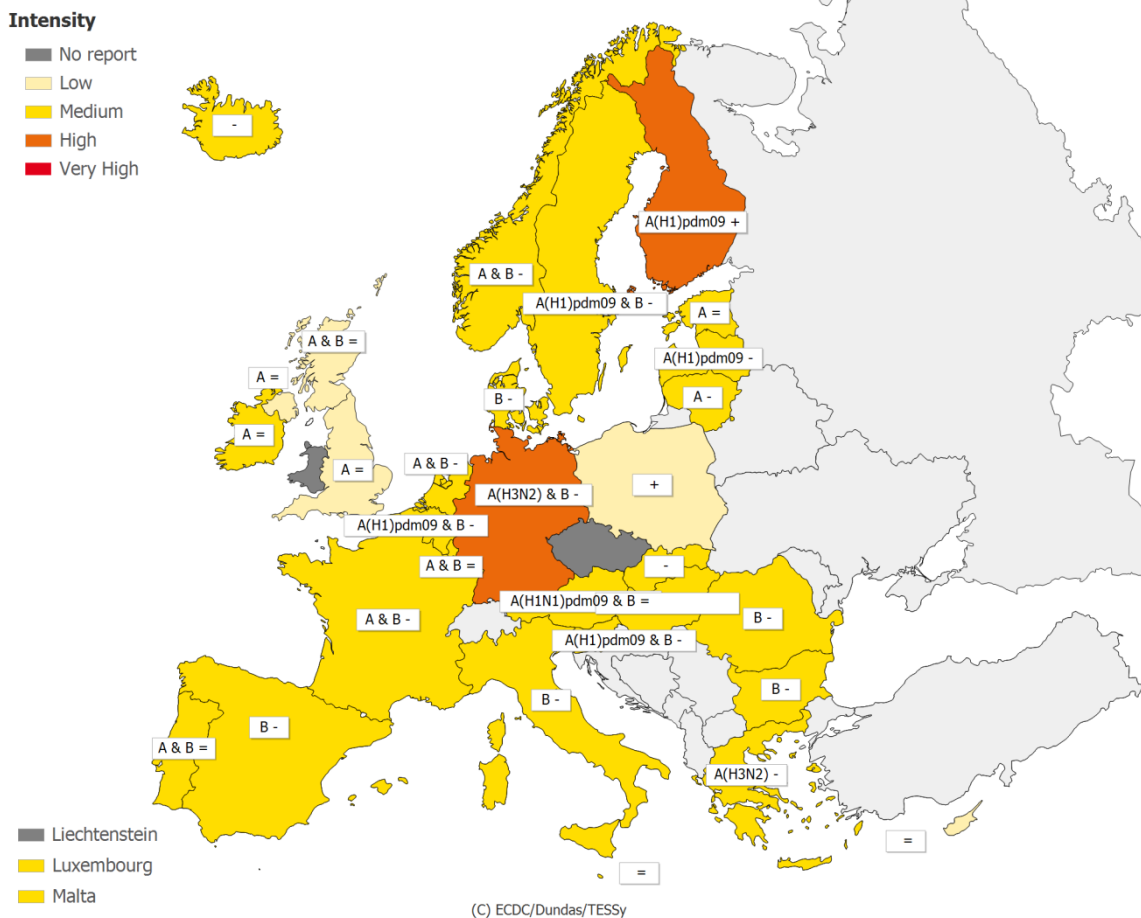
For week 9/2013, 27 countries reported clinical data. Of these, only Finland and Germany reported high intensity, while 22 countries reported medium intensity and Cyprus, Poland and the UK reported low intensity (Table 1, Map 1). In most countries, the situation has remained unchanged since week 5/2013. Of particular significance was the fact that Belgium reported medium intensity for the first time after five consecutive weeks of high or very high intensity.

The geographic pattern of influenza activity was reported as widespread by 19 countries (all of them reporting medium or high intensity), and regional or local by six. Only Cyprus and Poland reported no activity (Table 1, Map 2).

Two countries, Finland and Poland, reported increasing trends (Table 1, Map 2), compared to 6/28 countries in week 8/2013 and 11/29 countries in week 7/2013. Stable trends were reported by seven countries and 18 countries reported decreasing trends. Five countries, Bulgaria, Germany, Hungary, Latvia, and Romania, reported decreasing trends for the first time since the beginning of influenza transmission this season.

Overall, the situation reported for week 9/2013 suggests that the declining trend which started in week 5/2013 is continuing with additional countries reporting decreasing activity.

Map 1. Intensity for week 9/2013

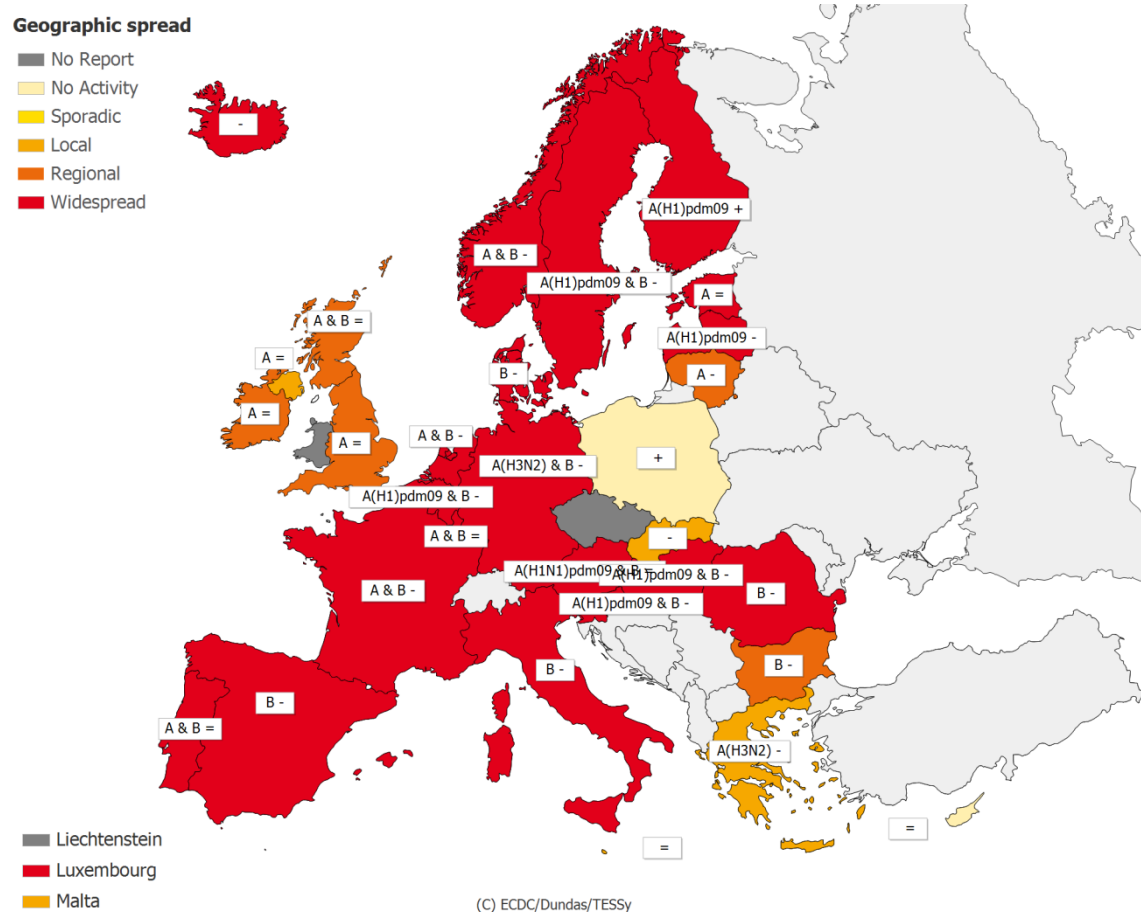


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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	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 & B	Type B and Type A, Subtype (H1N1)pdm09
		A(H3N2)	Type A, Subtype H3N2
		A(H3N2) & B	Type B and Type A, Subtype H3N2

Map 2. Geographic spread for week 9/2013



* 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	+	Increasing clinical activity
No activity	No evidence of influenza virus activity (clinical activity remains at baseline levels)	-	Decreasing clinical activity
Sporadic	Isolated cases of laboratory confirmed influenza infection	=	Stable clinical activity
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	Type A
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 & B	Type A and B
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(H1)pdm09	Type A, Subtype (H1)pdm09
		A(H1)pdm09 & B	Type B and Type A, Subtype (H1)pdm09
		A(H1N1)pdm09 & B	Type B and Type A, Subtype (H1N1)pdm09
		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 9/2013

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	Stable	67	A(H1N1)pdm09 & B	76.1	1637.8	-	Graphs	Graphs
Belgium	Medium	Widespread	Decreasing	80	A(H1)pdm09 & B	73.8	567.0	1965.0	Graphs	Graphs
Bulgaria	Medium	Regional	Decreasing	33	B	30.3	-	1237.3	Graphs	Graphs
Cyprus	Low	No activity	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic				-	-	0.0	-	-		
Denmark	Medium	Widespread	Decreasing	17	B	64.7	136.3	-	Graphs	Graphs
Estonia	Medium	Widespread	Stable	61	A	45.9	27.8	713.1	Graphs	Graphs
Finland	High	Widespread	Increasing	39	A(H1)pdm09	41.0	-	-	Graphs	Graphs
France	Medium	Widespread	Decreasing	111	A & B	57.7	-	2230.9	Graphs	Graphs
Germany	High	Widespread	Decreasing	275	A(H3N2) & B	52.7	-	2219.5	Graphs	Graphs
Greece	Medium	Local	Decreasing	20	A(H3N2)	50.0	184.0	-	Graphs	Graphs
Hungary	Medium	Widespread	Decreasing	86	A(H1)pdm09 & B	47.7	376.0	-	Graphs	Graphs
Iceland	Medium	Widespread	Decreasing	0	-	0.0	76.0	-	Graphs	Graphs
Ireland	Medium	Regional	Stable	38	A	55.3	45.0	-	Graphs	Graphs
Italy	Medium	Widespread	Decreasing	103	B	73.8	757.3	-	Graphs	Graphs
Latvia	Medium	Widespread	Decreasing	8	A(H1)pdm09	62.5	370.3	1255.0	Graphs	Graphs
Lithuania	Medium	Regional	Decreasing	29	A	69.0	55.2	576.2	Graphs	Graphs
Luxembourg	Medium	Widespread	Stable	70	A & B	48.6	-*	-*	Graphs	Graphs
Malta	Medium	Local	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Netherlands	Medium	Widespread	Decreasing	42	A & B	59.5	103.3	-	Graphs	Graphs
Norway	Medium	Widespread	Decreasing	2	A & B	50.0	111.0	-	Graphs	Graphs
Poland	Low	No activity	Increasing	58	None	43.1	308.0	-	Graphs	Graphs
Portugal	Medium	Widespread	Stable	16	A & B	50.0	48.4	-	Graphs	Graphs
Romania	Medium	Widespread	Decreasing	22	B	90.9	6.0	945.7	Graphs	Graphs
Slovakia	Medium	Local	Decreasing	22	None	54.5	422.9	2376.6	Graphs	Graphs
Slovenia	Medium	Widespread	Decreasing	35	A(H1)pdm09 & B	80.0	86.8	1306.6	Graphs	Graphs
Spain	Medium	Widespread	Decreasing	341	B	49.3	168.5	-	Graphs	Graphs
Sweden	Medium	Widespread	Decreasing	93	A(H1)pdm09 & B	41.9	11.9	-	Graphs	Graphs
UK - England	Low	Regional	Stable	101	A	29.7	15.1	367.8	Graphs	Graphs
UK - Northern Ireland	Low	Local	Stable	5	A	80.0	44.8	473.4	Graphs	Graphs
UK - Scotland	Low	Regional	Stable	45	A & B	57.8	25.4	529.0	Graphs	Graphs
UK - Wales				-	-	0.0	-	-		
Europe				1819		53.7				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 9/2013, 25 countries tested 1 819 sentinel specimens, of which 977 (54%) were positive for influenza virus, the lowest proportion observed since the peak at 61% in week 5/2013. Of these 977 specimens, 456 (47%) were type A and 521 (53%) type B (Tables 1–2, Figure 1).

In addition, 3 202 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 (55%) were type A and 1 434 (45%) type B (Table 2).

Of the 11 640 influenza virus detections in sentinel specimens since week 40/2012, 5 751 (49%) were type A, and 5 889 (51%) were type B viruses. Of 5 066 influenza A viruses subtyped, 3 263 (64%) were A(H1)pdm09 and 1 803 (36%) were A(H3) (Table 2, Figure 2). Following a constant increase since week 2/2013, the proportion of A(H1)pdm09 has now remained unchanged since week 7/2013. Of the 1 583 type B viruses ascribed to lineage, 1 433 (91%) were Yamagata and 150 (9%) Victoria (Table 2).

Of the 1 560 antigenic characterisations of influenza A viruses reported for sentinel and non-sentinel specimens since week 40/2012, 1 079 (69%) have been characterised as A/Victoria/361/2011(H3N2)-like. Of the 1 136 antigenic characterisations of influenza B viruses reported, 566 (50%) have been characterised as B/Estonia/55669/2011-like (B/Yamagata/16/88-lineage) and 272 (24%) as B/Wisconsin/1/2010-like (B/Yamagata/16/88-lineage) (Table 3).

Since week 40/2012, 913 genetic characterisations of influenza viruses were reported for sentinel and non-sentinel specimens. Of the 249 A(H1)pdm09 viruses characterised, 179 (72%) were A(H1)pdm09 group 6 representative A/St Petersburg/27/2011. Of the 261 A(H3) viruses characterised, 190 (73%) 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 664 viruses have been tested for antiviral susceptibility and reported on by Denmark, Germany, Greece, the Netherlands, Norway, Portugal, Spain, Sweden and the UK. Four A(H1N1)pdm09 tested for NAI susceptibility showed the H275Y amino acid substitution associated with oseltamivir highly reduced inhibition. Two viruses were from immunocompromised patients who had received oseltamivir and two from untreated outpatients. 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 the UK showed reduced inhibition for oseltamivir and normal inhibition by zanamivir, associated with the I221T substitution. This child was also an outpatient and had not been exposed to antiviral drugs. None of the other 245 A(H1N1)pdm09 viruses and the 181 A(H3N2) and 220 B viruses tested for NAI susceptibility showed genetic (markers) or phenotypic (IC50) 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 9/2013, 19 countries reported 628 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 40/2012–9/2013

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	456	1768	5751	26107
A(H1)pdm09	205	511	3263	10106
A(H3)	154	175	1803	3402
A(subtype unknown)	97	1082	685	12599
Influenza B	521	1434	5889	13107
B(Vic) lineage	13	4	150	95
B(Yam) lineage	131	57	1433	1167
Unknown lineage	377	1373	4306	11845
Total influenza	977	3202	11640	39214

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 40/2012–9/2013

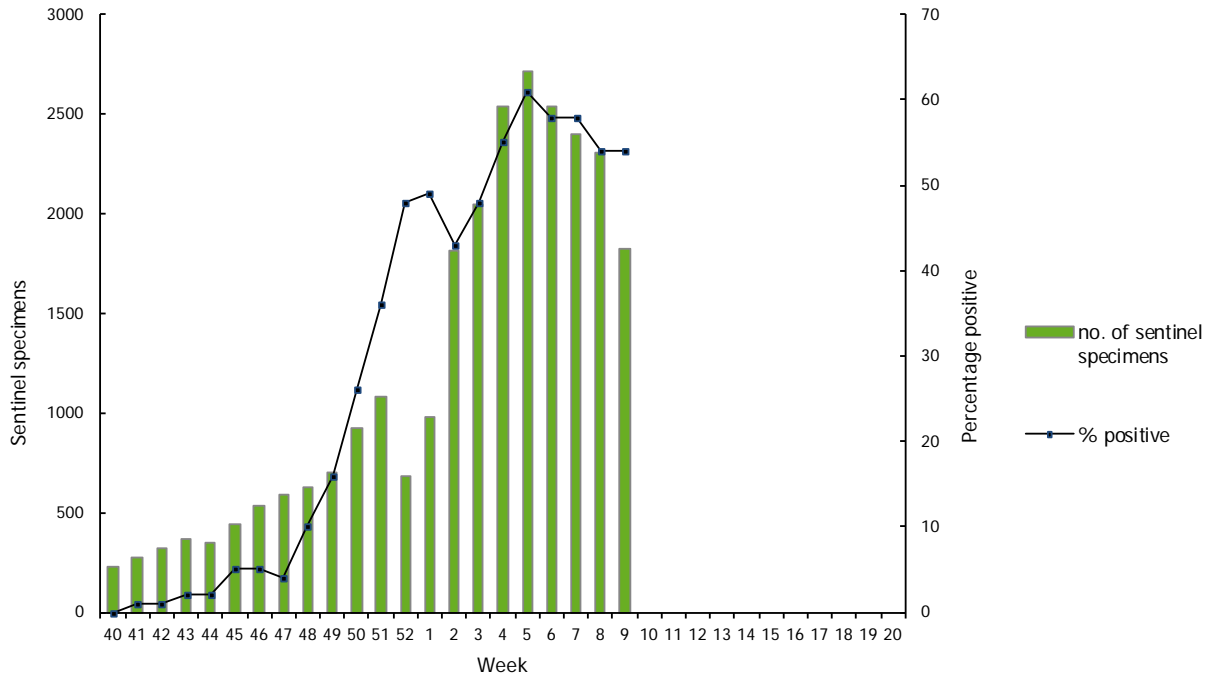


Figure 2. Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40/2012–9/2013

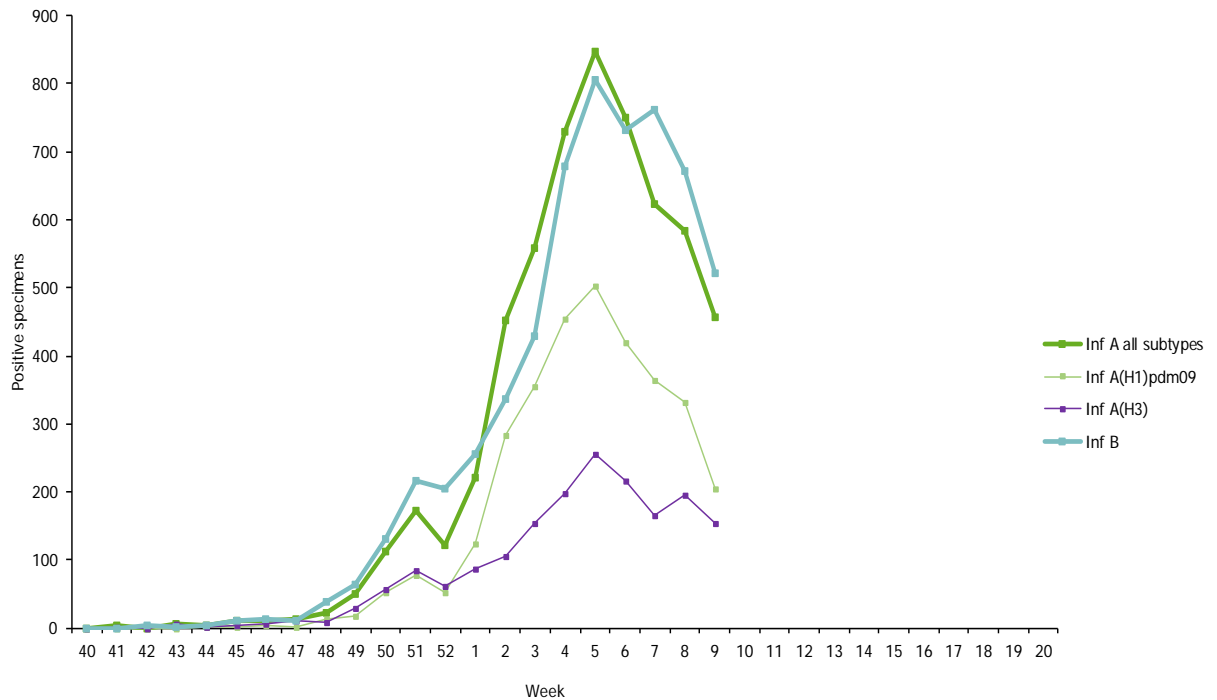


Figure 3. Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2012–9/2013

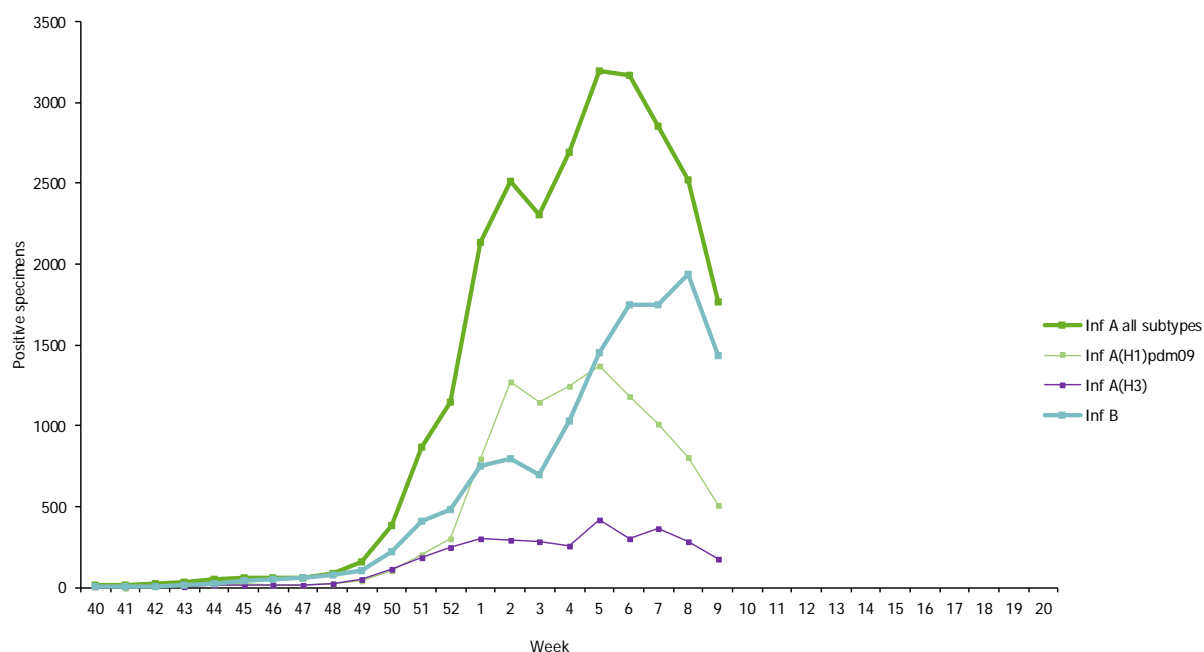
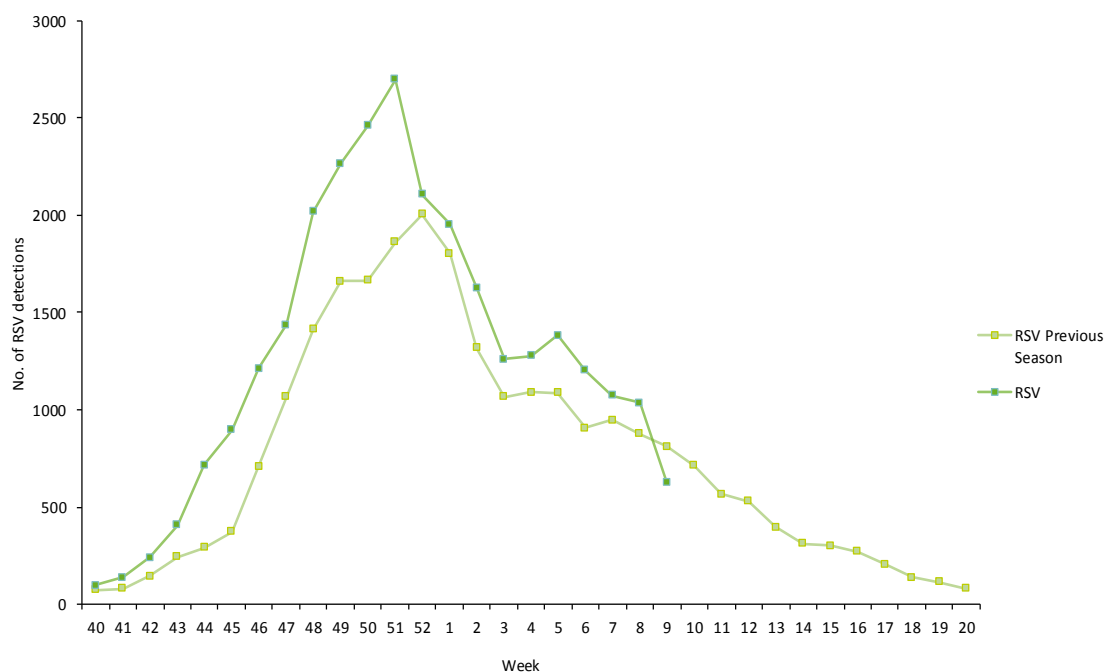


Table 3. Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–9/2013

Antigenic group	Number of viruses
A(H1)pdm09 A/California/7/2009 (H1N1)-like	468
A(H1)pdm09 not attributed to category	7
A(H3) A/Perth/16/2009 (H3N2)-like	2
A(H3) A/Victoria/361/2011 (H3N2)-like	1079
A(H3) not attributed to category	4
B/Brisbane/60/2008-like (B/Victoria/2/87 lineage)	134
B(Vic) lineage not attributed to category	3
B/Estonia/55669/2011-like (B/Yamagata/16/88-lineage)	566
B/Florida/4/2006-like (B/Yamagata/16/88 lineage)	8
B/Wisconsin/1/2010-like (B/Yamagata/16/88-lineage)	272
B/Bangladesh/3333/2007-like (B/Yamagata/16/88 lineage)	134
B(Yam) lineage not attributed to category	19
Total	2696

Table 4. Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–9/2013

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	179
A(H1)pdm09 group 7 representative A/St Petersburg/100/2011	50
A(H1)pdm09 not attributed to clade/group	7
A(H3) clade repr. A/Victoria/208/2009	51
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	190
B(Vic) lineage - clade representative B/Brisbane/60/2008	72
B(Yam) lineage - clade repr. B/Bangladesh/3333/2007	95
B(Yam)-lineage clade repr. B/Wisconsin/1/2010	90
B(Yam)-lineage clade repr. B/Estonia/55669/2011	139
B(Yam)-lineage clade representative B/Brisbane/3/2007	7
Total	913

Figure 4. Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2012–9/2013

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 week 9/2013, 154 hospitalised laboratory-confirmed influenza cases including three with fatal outcome were reported by eight countries (Belgium, France, Ireland, Romania, Slovakia, Spain, Sweden, and the UK) (Table 5).

Since week 40/2012, 2 144 hospitalised laboratory-confirmed influenza cases including 121 with fatal outcome have been reported by eight countries (Table 6). Of the 78 fatal cases with known vaccination status, ten had received the seasonal vaccine.

Of the 2 147 hospitalised laboratory-confirmed influenza cases reported since week 40/2012, 1 207 (56%) were related to influenza type A and 940 (44%) to type B. Of 707 subtyped influenza A viruses, 485 (69%) were A(H1)pdm09 and 222 (31%) were A(H3) viruses (Table 5).

Table 5. Number of hospitalised laboratory-confirmed influenza cases and fatalities by influenza type and subtype, week 9/2013 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	99	1204	78
A(H1)pdm09	40	482	44
A(H3)	18	222	7
A(subtyping not performed)	41	500	27
Influenza B	55	940	43
Total	154	2144	121

Table 6. Cumulative number of hospitalised laboratory-confirmed influenza cases, weeks 40/2012–9/2013

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	275		5		
France	569		80		
Ireland	235		1		
Romania	55	0.95	6	0.1	5813728
Slovakia	40	0.74	3	0.06	5440078
Spain	243		21		
Sweden	82		5		
United Kingdom	648	1.09			59255492
Total	2147		121		

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 9/2013 data, based on 15 countries or regions, showed increased mortality among people aged 65 years and above: all-cause mortality was approximately three z-scores above the baseline in weeks 1–3/2013 and has, since week 4/2013, been around four to five z-scores above the baseline. No increased 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 [here](#).

Individual country analysis showed a diverse temporal pattern of all-cause mortality in people aged 65 years and above. While in some countries mortality increases of approximately three z-scores above the baseline were observed at the end of 2012 (Denmark, Ireland, Sweden, and the UK (England & Scotland)), in others, increases started later (Belgium, France, the Netherlands). Other countries have not reported mortality increases so far this season (Germany (Berlin & Hesse), Hungary, Portugal, Spain). The highest and longest sustained excess mortality was seen in Denmark, where influenza activity was dominated by A(H3N2) circulation.

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

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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