

SURVEILLANCE REPORT

Weekly influenza surveillance overview

25 January 2013

Main surveillance developments in week 3/2013 (14–20 January 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 of influenza surveillance for the 2012–2013 in Europe started in week 40/2012 and notable transmission began in week 49/2012, about six weeks earlier than in 2011–2012.

- Thirteen countries and the UK (Northern Ireland) reported medium intensity and Iceland reported high intensity. Geographic spread was reported as widespread or regional by 13 countries.
- Seventeen countries reported increasing transmission, compared to 19 countries in week 2/2013. Five countries, mostly in western Europe, reported decreasing trends, compared to only two countries in week 02/2013.
- Since week 40/2012, 48% of influenza-positive sentinel specimens were type A, and 52% were type B viruses. Of 1 253 influenza A viruses subtyped, 58% were A(H1)pdm09 and 42% were A(H3). Of 269 type B viruses with known lineage, 86% were Yamagata and 14% were Victoria. The latter lineage is not included in the 2012–2013 vaccine.
- For week 3/2013, all eight reporting countries described hospitalised severe influenza cases, 30 in total. Of seven subtyped A viruses from these patients, six were A(H1N1)pdm09 and one A(H3).

Based on the ILI/ARI intensity and the percentage of positive sentinel specimens at the EU/EEA level, influenza activity remains high and increasing in many European countries, although transmission may have peaked in some countries, mostly in western Europe.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): the same countries reported medium activity as in the previous week, apart from Norway which reported high activity in week 2/2013. For more information, [click here](#).

Virological surveillance: Since the beginning of the season, 48% of influenza virus-positive sentinel specimens have been type A, and 52% type B viruses. For more information, [click here](#).

Hospital surveillance of influenza laboratory-confirmed cases: For week 3/2013, all eight reporting countries described hospitalised severe influenza cases, 30 in total. For more information, [click here](#).

* Erratum. The following changes were made on 25 January 2013:

Page 1, new sentence added in box under first bullet point and final paragraph in box amended.

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

For week 3/2013, of 26 countries reporting clinical data, 11 and the UK (England and Scotland) experienced low-intensity influenza activity, while 13 and the UK (Northern Ireland) reported medium intensity. Only Iceland reported high intensity (Table 1, Map 1). The same countries reported medium activity as in the previous week, apart from Norway which reported high activity in week 2/2013.

Geographic spread was reported as widespread by 12 countries and the UK (England), regional by three and the UK (Northern Ireland and Scotland), local by three and sporadic by five. Only Cyprus and Romania reported no activity (Table 1, Map 2).

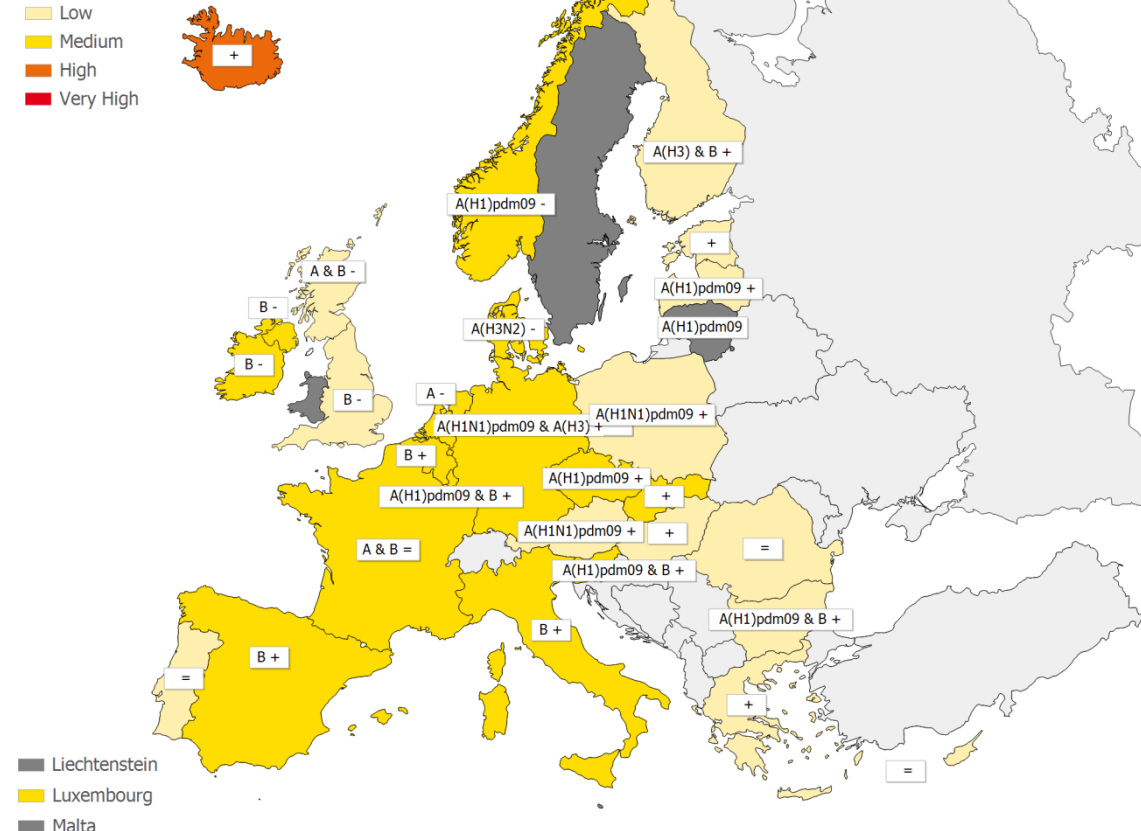
Increasing trends in clinical activity were reported by 17 countries and stable trends by four countries. Denmark, Ireland, the Netherlands, Norway and the UK reported decreasing trends (Table 1, Map 2).

In addition, the percentage of influenza virus-positive sentinel specimens was similar to that observed in the previous week. Overall, influenza activity in Europe may be considered stable on the basis of combined indicators, intensity of ILI/ARI rates and similar proportions of influenza virus-positive specimens (see virology).

Map 1. Intensity for week 3/2013

Intensity

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

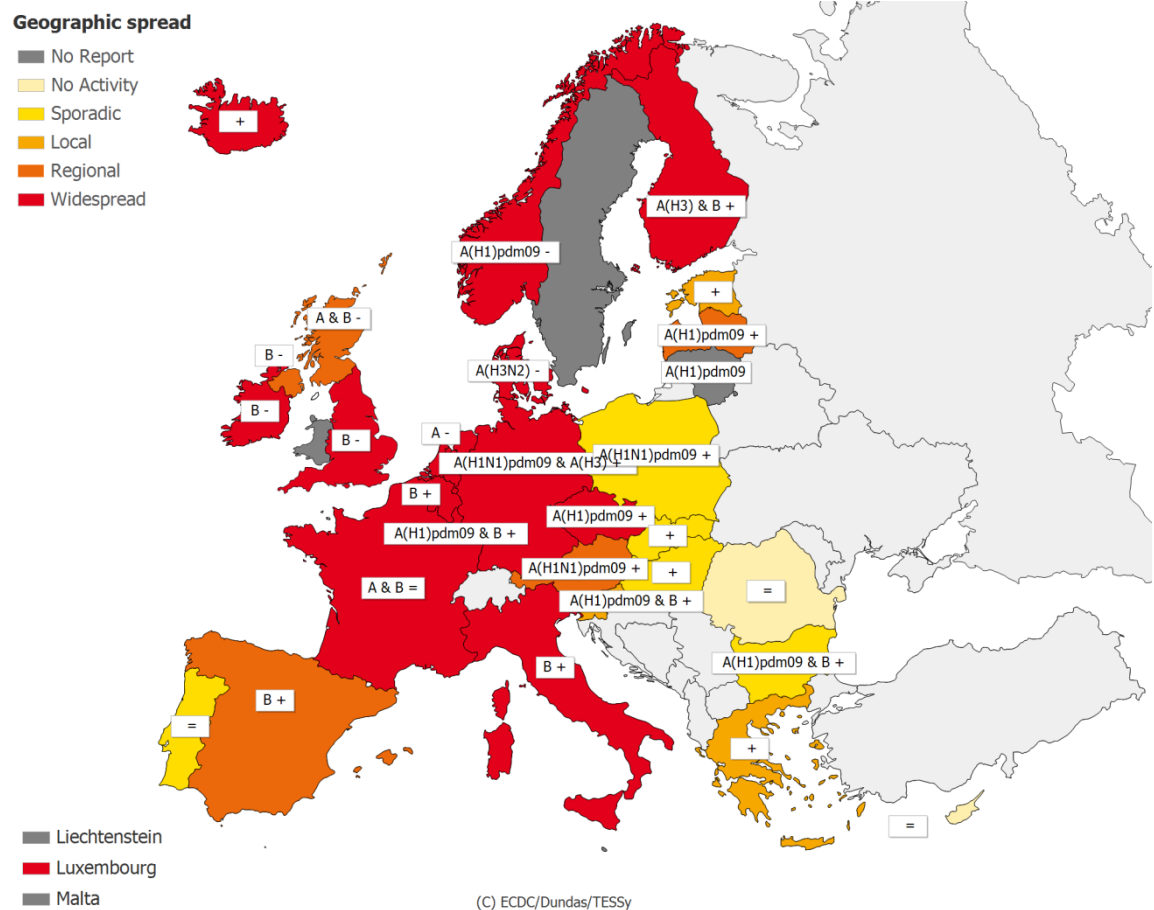


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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 3/2013



* 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 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	Type A, Subtype (H1N1)pdm09
		A(H1N1)pdm09 & A(H3)	Type A, Subtype (H1N1)pdm09 and H3
		A(H3) & B	Type B and Type A, Subtype H3
		A(H3N2)	Type A, Subtype H3N2
		B	Type B

Table 1. Epidemiological and virological overview by country, week 3/2013

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	Regional	Increasing	48	A(H1N1)pdm09	43.8	32.0	-	Graphs	Graphs
Belgium	Medium	Widespread	Increasing	93	B	64.5	420.4	1832.5	Graphs	Graphs
Bulgaria	Low	Sporadic	Increasing	19	A(H1)pdm09 & B	26.3	-	932.2	Graphs	Graphs
Cyprus	Low	No activity	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic	Medium	Widespread	Increasing	9	A(H1)pdm09	33.3	163.8	1289.8	Graphs	Graphs
Denmark	Medium	Widespread	Decreasing	22	A(H3N2)	72.7	150.3	-	Graphs	Graphs
Estonia	Low	Local	Increasing	13	None	30.8	10.0	317.0	Graphs	Graphs
Finland	Low	Widespread	Increasing	27	A(H3) & B	55.6	-	-	Graphs	Graphs
France	Medium	Widespread	Stable	166	A & B	57.2	-	2217.7	Graphs	Graphs
Germany	Medium	Widespread	Increasing	180	A(H1N1)pdm09 & A(H3)	47.8	-	1417.9	Graphs	Graphs
Greece	Low	Local	Increasing	5	None	40.0	80.7	-	Graphs	Graphs
Hungary	Low	Sporadic	Increasing	38	None	13.2	121.6	-	Graphs	Graphs
Iceland	High	Widespread	Increasing	0	-	0.0	89.8	-	Graphs	Graphs
Ireland	Medium	Widespread	Decreasing	60	B	53.3	50.2	-	Graphs	Graphs
Italy	Medium	Widespread	Increasing	94	B	36.2	625.3	-	Graphs	Graphs
Latvia	Low	Regional	Increasing	4	A(H1)pdm09	75.0	39.9	1188.7	Graphs	Graphs
Lithuania				49	A(H1)pdm09	71.4	-	-	Graphs	Graphs
Luxembourg	Medium	Widespread	Increasing	40	A(H1)pdm09 & B	52.5	-*	-*	Graphs	Graphs
Malta				-	-	0.0	-	-		
Netherlands	Medium	Widespread	Decreasing	27	A	51.9	82.4	-	Graphs	Graphs
Norway	Medium	Widespread	Decreasing	3	A(H1)pdm09	66.7	229.7	-	Graphs	Graphs
Poland	Low	Sporadic	Increasing	237	A(H1N1)pdm09	27.0	560.2	-	Graphs	Graphs
Portugal	Low	Sporadic	Stable	14	None	50.0	27.8	-	Graphs	Graphs
Romania	Low	No activity	Stable	5	-	20.0	3.0	578.0	Graphs	Graphs
Slovakia	Medium	Sporadic	Increasing	4	None	100.0	227.1	1847.0	Graphs	Graphs
Slovenia	Medium	Local	Increasing	62	A(H1)pdm09 & B	50.0	24.9	1481.7	Graphs	Graphs
Spain	Medium	Regional	Increasing	242	B	45.5	95.1	-	Graphs	Graphs
Sweden				-	-	0.0	-	-		
UK - England	Low	Widespread	Decreasing	111	B	0.0	13.6	322.4	Graphs	Graphs
UK - Northern Ireland	Medium	Regional	Decreasing	13	B	238.5	53.9	441.8	Graphs	Graphs
UK - Scotland	Low	Regional	Decreasing	44	A & B	29.5	33.8	548.9	Graphs	Graphs
UK - Wales				-	-	0.0	-	-		
Europe				1629		43.8				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.

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 03/2013, 25 countries reported virological data. Of 1 629 sentinel specimens tested, 714 (43.8%) were positive for influenza virus (Tables 1–2, Figure 1). This percentage has levelled off since week 52/2012. In addition, 2 143 non-sentinel source specimens (e.g. specimens collected for diagnostic purposes in hospitals) were found to be positive for influenza virus (Table 2).

Of the 2 975 influenza virus detections in sentinel specimens since week 40/2012, 1 430 (48%) were type A, and 1 545 (52%) were type B viruses. Of 1 253 influenza A viruses subtyped, 732 (58%) were A(H1)pdm09 and 521 (42%) were A(H3) (Table 2, Figure 2). Of the 269 type B viruses ascribed to lineage, 231 (86%) were Yamagata and 38 (14%) were Victoria (Table 2). The latter lineage is not included in the 2012–2013 vaccine.

For the most recent week (03/2013) there were 714 virus detections in sentinel specimens, 398 (56%) were type A, and 316 (44%) were type B viruses. Of 336 influenza A viruses subtyped, 244 (73%) were A(H1)pdm09 and 92 (27%) were A(H3) (Table 2). This is a higher predominance of A(H1) over A(H3) in Europe than in previous weeks, a pattern also noted in isolates sent as specimens to the WHO Collaborating Centre in Europe.

Of the 11 719 influenza viruses detected from non-sentinel sources since week 40/2012, 8 440 (72%) were type A, and 3 279 (28%) were type B. Of 4 368 type A viruses subtyped, 3 110 (71%) were A(H1)pdm09 and 1 258 (29%) A(H3). Of the 456 B viruses ascribed to lineage, 412 (90%) were Yamagata and 44 (10%) Victoria (Table 2, Figure 3).

The patterns of virus co-circulation in EU/EAA countries are considerably different from that reported in North America where approximately 83% are influenza type A viruses, with very few influenza A(H1)pdm09 viruses, and 17% are B viruses (see [CDC Flu View](#) and more [recent commentary](#) week 3/2013).

Of the 994 antigenic characterisations of influenza viruses reported for sentinel and non-sentinel specimens since week 40/2012, 620 (62%) have been characterised as A(H3)/Victoria/361/2011-like (Table 3).

Of the 261 genetic characterisations of influenza viruses reported for sentinel and non-sentinel specimens since week 40/2012, 112 (43%) were A(H3) clade representative A/Victoria/208/2009, of which 74 (66%) fell within genetic group 3C, represented by A/Victoria/361/2011 (Table 4).

More details on circulating viruses can be found in the [December report](#) prepared by the Community Network of Reference Laboratories (CNRL) coordination team. A(H1N1)pdm09 viruses continued to show genetic drift from the vaccine virus, A/California/07/2009, but the vast majority remained antigenically similar. Generally, the viruses circulating this season remain well-matched with the recommended 2012/13 seasonal vaccine viruses.

Since week 40/2012, a total of 196 viruses have been tested and reported on by EU/EEA countries: Denmark, Germany, the Netherlands, Norway, Spain, Sweden and the UK. None of the 52 A(H1N1)pdm09, 78 A(H3N2) and 66 B viruses tested for neuraminidase inhibitor, oseltamivir and zanamivir susceptibility showed genetic (markers) or phenotypic (IC₅₀) evidence for (highly) reduced inhibition. Five 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.

For week 3/2013, 16 countries reported 789 respiratory syncytial virus detections (Figure 6). The number of RSV detections is returning to baseline levels

Table 2. Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2012–3/2013

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	398	1657	1430	8440
A(H1)pdm09	244	787	732	3110
A(H3)	92	103	521	1258
A(sub-type unknown)	62	767	177	4072
Influenza B	316	486	1545	3279
B(Vic) lineage	8	1	38	44
B(Yam) lineage	55	14	231	412
Unknown lineage	253	471	1276	2823
Total influenza	714	2143	2975	11719

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

Figure 1. Proportion of sentinel specimens positive for influenza virus, weeks 40/2012–3/2013

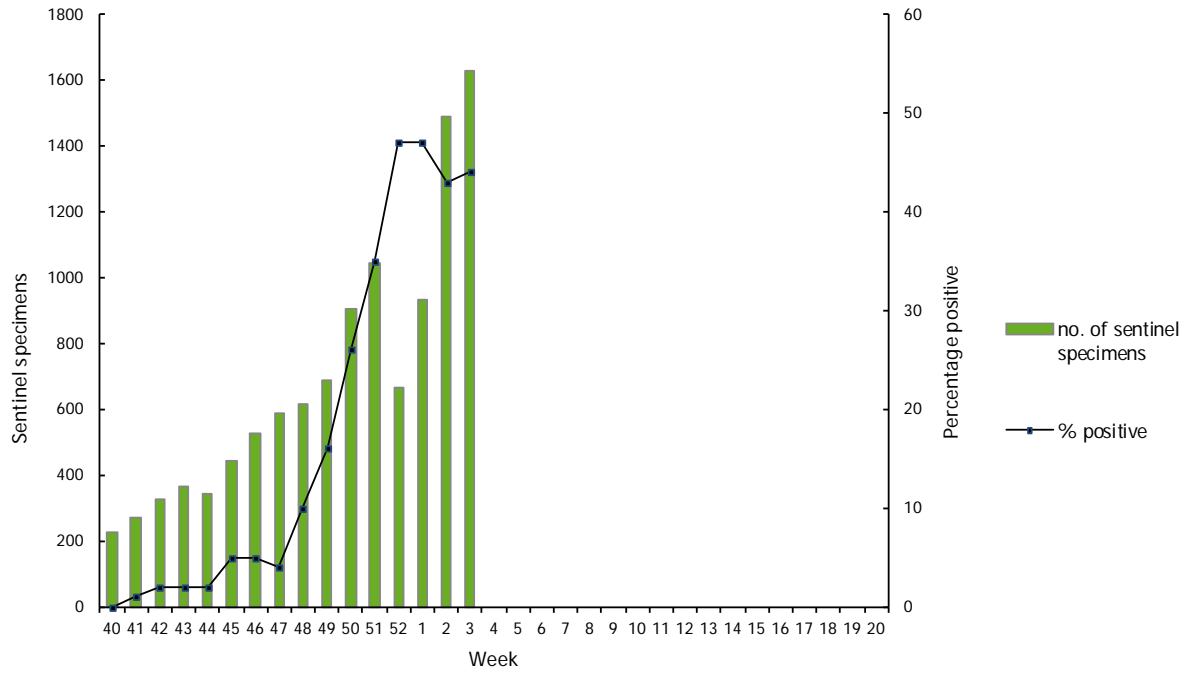


Figure 2. Number of sentinel specimens positive for influenza virus, by type, subtype and week of report, weeks 40/2012–3/2013

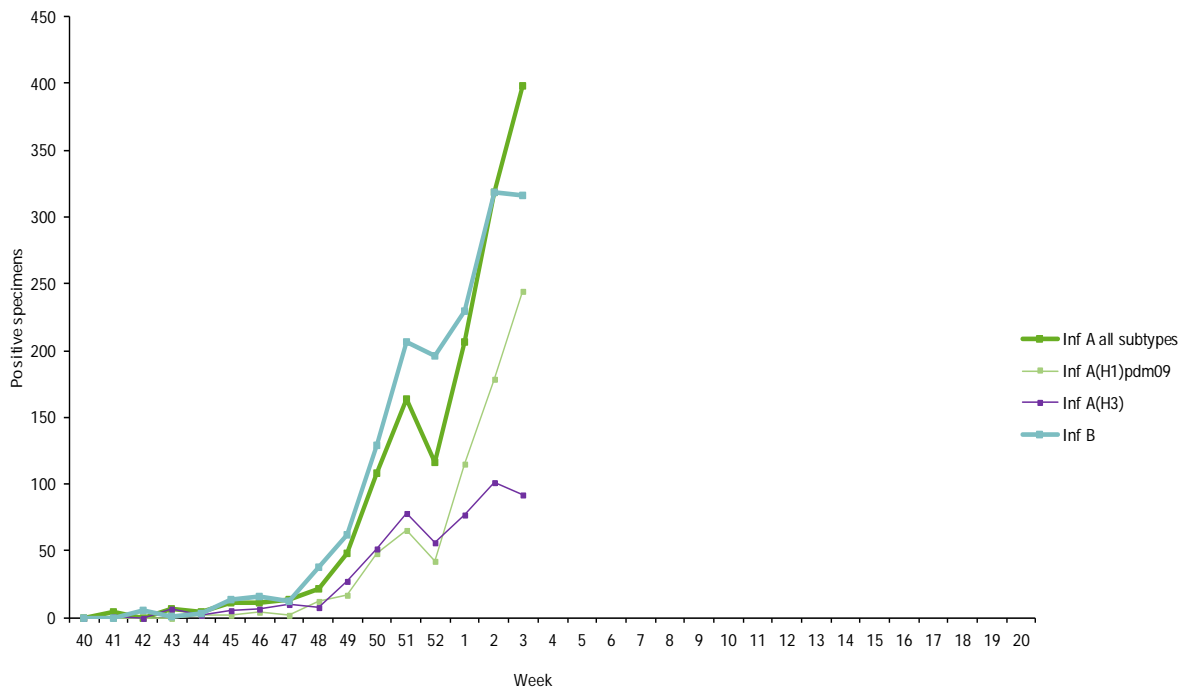
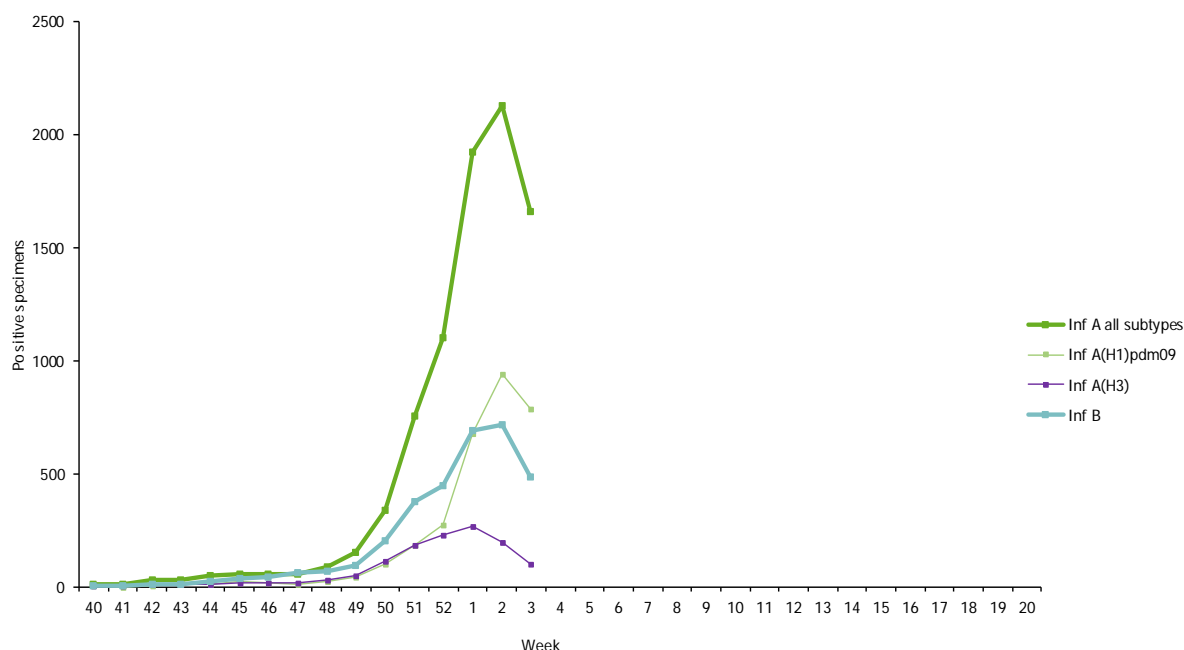


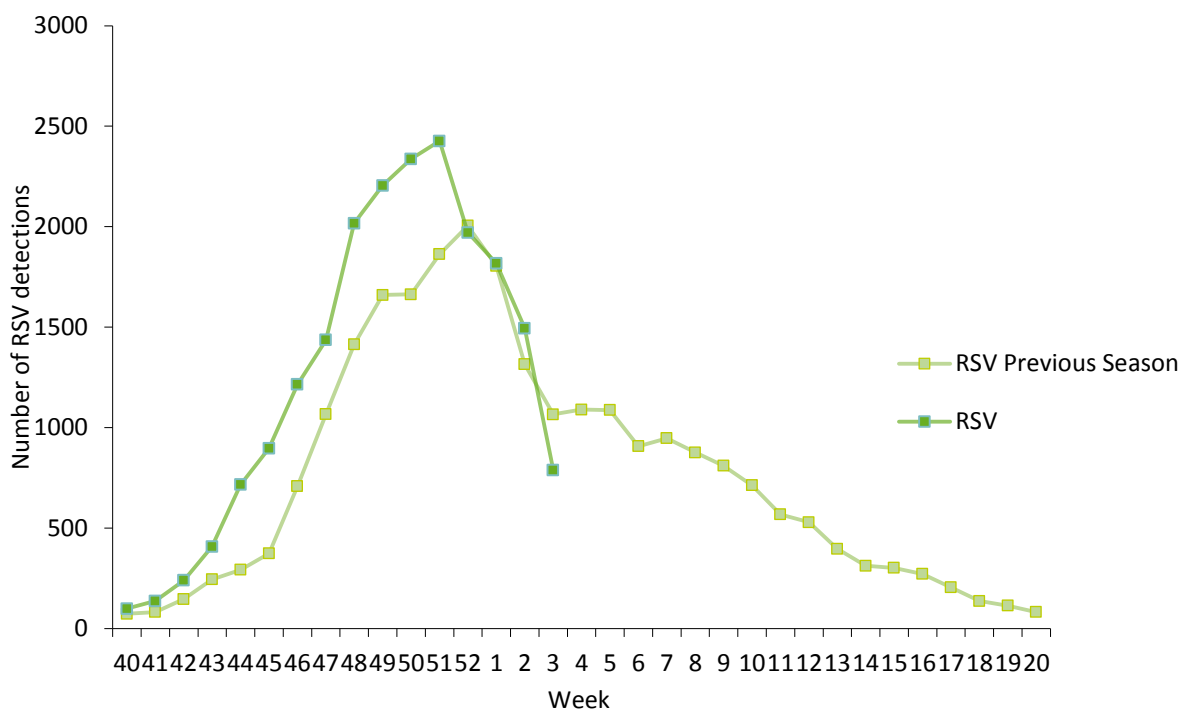
Figure 3. Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2012–3/2013**Table 3.** Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–3/2013

Antigenic group	Number of viruses
A(H1)pdm09 A/California/7/2009 (H1N1)-like	82
A(H1)pdm09 not attributed to category	2
A(H3) A/Perth/16/2009 (H3N2)-like	1
A(H3) A/Victoria/361/2011 (H3N2)-like	620
A(H3) not attributed to category	1
B/Brisbane/60/2008-like (B/Victoria/2/87 lineage)	45
B/Estonia/55669/2011-like (B/Yamagata/16/88-lineage)	116
B/Florida/4/2006-like (B/Yamagata/16/88 lineage)	1
B/Wisconsin/1/2010-like (B/Yamagata/16/88-lineage)	66
B/Bangladesh/3333/2007-like (B/Yamagata/16/88 lineage)	60

Table 4. Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2012–3/2013

Phylogenetic group	Number of viruses
A(H1)pdm09 group 6 representative A/St Petersburg/27/2011	48
A(H1)pdm09 group 7 representative A/St Petersburg/100/2011	13
A(H1)pdm09 not attributed to clade/group	3
A(H3) clade repr. A/Victoria/208/2009	18
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	74
B(Vic) lineage - clade representative B/Brisbane/60/2008	22
B(Yam) lineage - clade repr. B/Bangladesh/3333/2007	25
B(Yam)-lineage clade repr. B/Wisconsin/1/2010	18
B(Yam)-lineage clade repr. B/Estonia/55669/2011	20

Figure 6. Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2012–3/2013



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](#).

Severe influenza surveillance

Weekly analysis of hospitalised laboratory-confirmed influenza cases

In week 3/2013, all eight reporting countries described hospitalised severe influenza cases – 30 in total. Of seven subtyped A viruses from these patients, six were A(H1N1)pdm09 and one A(H3). Since week 40/2012, 465 hospitalised laboratory-confirmed influenza cases have been reported, 19 of which have died.

Table 5. Number of hospitalised laboratory-confirmed influenza cases by influenza type and subtype, week 3/2013 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	18	264
A(H1N1)pdm09	6	77
A(H3)	2	53
A(sub-typing not performed)	10	134
Influenza B	12	201
Total	30	465

Table 6. Cumulative number of hospitalised laboratory-confirmed influenza cases, weeks 40/2012–3/2013

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	47		1		
France	128		15		
Ireland	51				
Romania	5	0.09	1	0.02	5813728
Slovakia	3	0.06			5435273
Spain	29		1		
Sweden	13		1		
United Kingdom	189	0.32			59255492
Total	465		19		

Mortality from all causes

Pooled [analysis from EUROMoMo for week 3/2013](#) did not show any excess of all-cause mortality as yet this season. However, three out of 16 reporting countries, Denmark and UK (Scotland & England) saw increased mortality in older people (65 years and above). The increase was particularly clear in Denmark, where H3N2 transmission is predominant and peaked around Christmas.

Due to reporting delays, excess mortality associated with influenza may also appear after an interval. It is [estimated by ECDC](#) that there may be up to 38 500 premature deaths associated with influenza in an influenza season among the EU/EEA countries.

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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