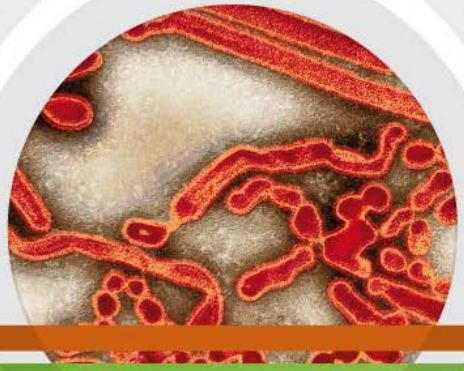


SURVEILLANCE REPORT

Weekly influenza surveillance overview

21 December 2012

Main surveillance developments in week 50/2012 (10–16 December 2012)

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 influenza surveillance in Europe for the season 2012–2013 started in week 40/2012. In week 49, ECDC announced that the season of influenza transmission had started.

- During week 50/2012, all countries reporting experienced low intensity of influenza-like illness or acute respiratory infection. Sporadic geographic spread was reported by fourteen countries and the UK (Northern Ireland). However, increasing trends in clinical activity were indicated by nine countries.
- Of 648 sentinel specimens, 112 (17.3%) were positive for influenza. This is the third successive increase in the weekly proportion of positive sentinel specimens, but without generalised spread in the community.
- Among 112 influenza detections in sentinel settings, 57 were type B and 55 were type A viruses. Detected viruses match well with the vaccine strains (last CNRL report).
- No hospitalised severe influenza cases were reported in week 50/2012.

Influenza activity is evident in some EU/EEA countries based on the increasing proportion of positive specimens and sporadic spread over the last three weeks, but the circulation of influenza viruses is not generalised in the community.

Sentinel surveillance of influenza-like illness (ILI) / acute respiratory infection (ARI): All reporting countries experienced low intensity, but increasing trends were observed by nine countries. For more information **click here**.

Virological surveillance: Twenty-two countries reported virological data. Of 648 specimens tested, 112 (17.3 %) were positive for influenza, this being the third consecutive week with an increase in the percentage. For more information **click here**.

Hospital surveillance of influenza laboratory-confirmed cases: In week 50/2012, no hospitalised laboratory-confirmed influenza cases were reported. For more information **click here**.

Sentinel surveillance (ILI/ARI)

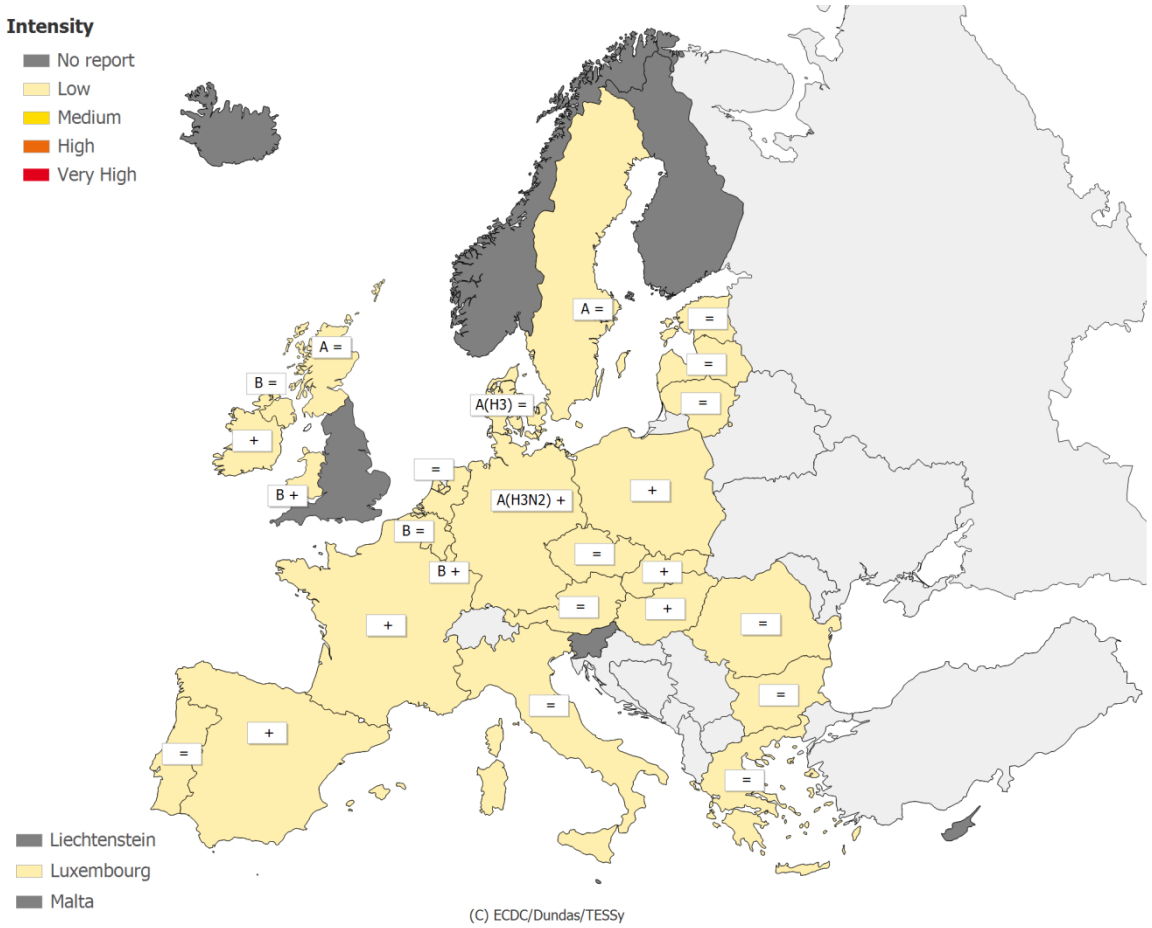
Weekly analysis – epidemiology

During week 50/2012, all 22 countries reporting clinical data and the UK (Northern Ireland, Scotland and Wales) experienced low-intensity influenza activity (Table 1, Map 1).

Geographic spread was reported as local by France, Lithuania and the UK (Northern Ireland, Scotland and Wales) and sporadic by 15 countries. Sweden reported regional spread. Five countries reported no activity (Table 1, Map 2).

Stable trends in clinical activity were reported by 14 countries and the UK (Northern Ireland and Scotland) while increasing trends were reported by eight countries and the UK (Wales). (Table 1, Map 2).

Map 1. Intensity for week 50/2012

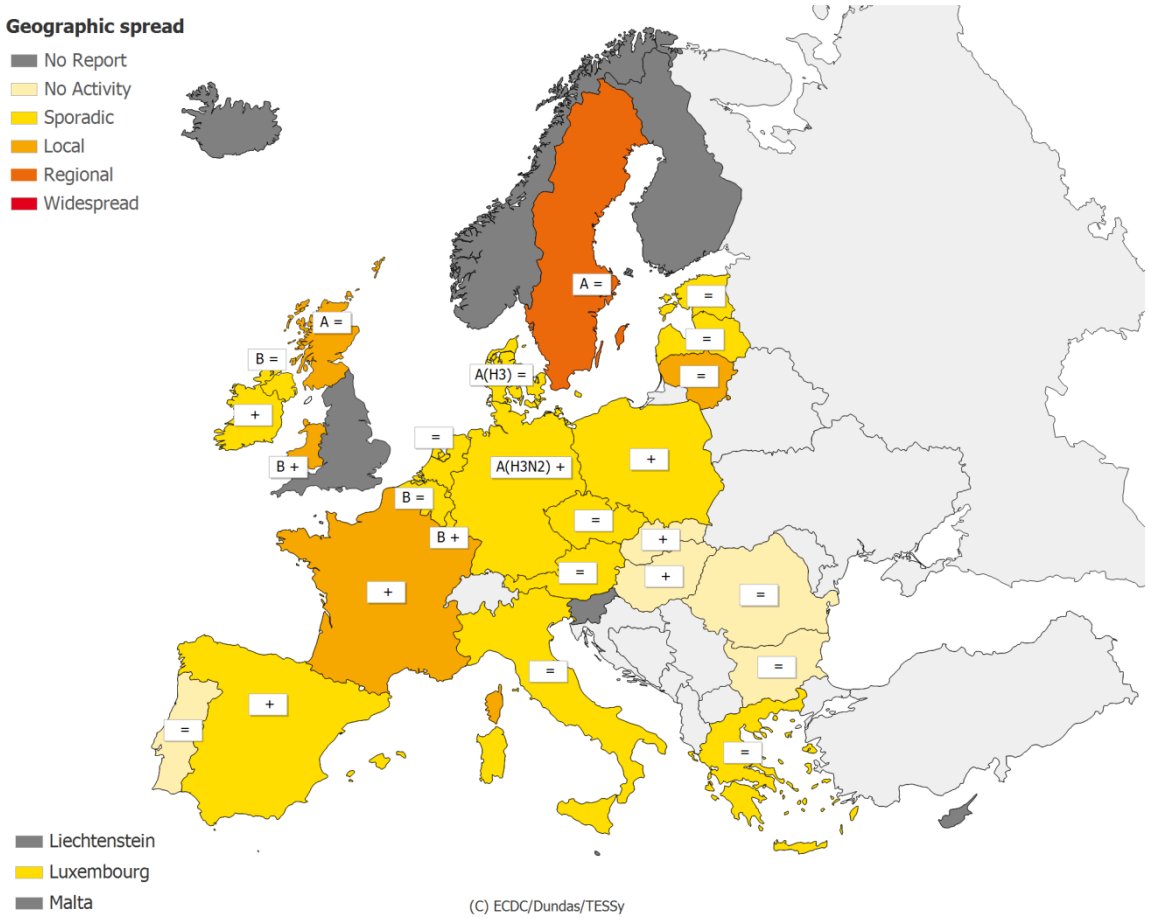


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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(H3)**	Type A, Subtype H3
		A(H3N2)	Type A, Subtype H3N2
		B	Type B

Map 2. Geographic spread for week 50/2012



* 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(H3)	Type A, Subtype H3
A(H3N2)	Type A, Subtype H3N2
B	Type B

Table 1. Epidemiological and virological overview by country, week 50/2012

Country	Intensity	Geographic spread	Trend	No. of sentinel specimens	Dominant type	Percentage positive	ILI per 100 000	ARI per 100 000	Epidemio-logical overview	Virological overview
Austria	Low	Sporadic	Stable	7	None	28.6	17.9	-	Graphs	Graphs
Belgium	Low	Sporadic	Stable	15	B	46.7	102.0	2163.3	Graphs	Graphs
Bulgaria	Low	No activity	Stable	43	None	0.0	-	884.5	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	Sporadic	Stable	15	None	20.0	42.4	1053.9	Graphs	Graphs
Denmark	Low	Sporadic	Stable	6	A(H3)	16.7	40.1	-	Graphs	Graphs
Estonia	Low	Sporadic	Stable	5	None	0.0	6.0	257.9	Graphs	Graphs
Finland				10	-	0.0	-	-	Graphs	Graphs
France	Low	Local	Increasing	-	-	0.0	-	2414.7	Graphs	Graphs
Germany	Low	Sporadic	Increasing	89	A(H3N2)	23.6	-	1267.2	Graphs	Graphs
Greece	Low	Sporadic	Stable	0	None	0.0	93.8	-	Graphs	Graphs
Hungary	Low	No activity	Increasing	23	None	0.0	79.3	-	Graphs	Graphs
Iceland				-	-	0.0	-	-		
Ireland	Low	Sporadic	Increasing	29	None	24.1	25.0	-	Graphs	Graphs
Italy	Low	Sporadic	Stable	26	None	19.2	164.0	-	Graphs	Graphs
Latvia	Low	Sporadic	Stable	0	None	0.0	0.0	1138.1	Graphs	Graphs
Lithuania	Low	Local	Stable	2	None	0.0	2.7	626.6	Graphs	Graphs
Luxembourg	Low	Sporadic	Increasing	14	B	42.9	-*	-*	Graphs	Graphs
Malta				0	None	0.0	-*	-*	Graphs	Graphs
Netherlands	Low	Sporadic	Stable	9	None	33.3	41.2	-	Graphs	Graphs
Norway				15	None	73.3	-	-	Graphs	Graphs
Poland	Low	Sporadic	Increasing	37	None	13.5	131.6	-	Graphs	Graphs
Portugal	Low	No activity	Stable	0	None	0.0	0.0	-	Graphs	Graphs
Romania	Low	No activity	Stable	9	-	0.0	1.8	645.8	Graphs	Graphs
Slovakia	Low	No activity	Increasing	3	None	0.0	156.2	1608.7	Graphs	Graphs
Slovenia				12	None	16.7	-	-	Graphs	Graphs
Spain	Low	Sporadic	Increasing	63	None	4.8	21.9	-	Graphs	Graphs
Sweden	Low	Regional	Stable	36	A	11.1	4.0	-	Graphs	Graphs
UK - England				133	None	16.5	-	-	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Stable	5	B	20.0	15.0	555.9	Graphs	Graphs
UK - Scotland	Low	Local	Stable	36	A	11.1	11.8	579.5	Graphs	Graphs
UK - Wales	Low	Local	Increasing	6	B	83.3	9.7	-	Graphs	Graphs
Europe				**648**		**17.3**				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 50/2012, 22 countries reported virological data. Of 648 sentinel specimens tested, 112 (17.3%) were positive for influenza virus (Tables 1–2, Figure 1). Compared to the previous week (13.3%), this increase indicates rising activity, but without generalised community spread.

In addition, 367 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 479 influenza viruses detected from sentinel and non-sentinel sources during week 50/2012, 277 (57.8 %) were type A and 202 (42.2%) were type B. Of the 152 influenza A viruses subtyped, 101 (66.4%) were A(H1)pdm09 and 51 (33.6%) were A(H3). Forty B viruses were characterised further: 39 (97.5%) were of B-Yamagata lineage and one (2.5%) of B-Victoria lineage (Table 2, Figures 2 and 3).

Of the 350 influenza virus detections in sentinel specimens since week 40/2012, 161 (46.0%) were type A, and 189 (54.0%) were type B viruses. Of 147 influenza A viruses subtyped, 87 (59.2%) were A(H3) and 60 (40.8%) were A(H1)pdm09 (Table 2, Figure 2).

Of the 1 223 influenza viruses detected from non-sentinel sources since week 40/2012, 735 (60.1%) were type A, and 488 (39.9%) were type B. Of 389 type A viruses subtyped, 213 (54.8%) were A(H1)pdm09 and 176 (45.2%) A(H3). The lineage of 117 (92.9%) type B viruses was Yamagata and nine (7.1%) were Victoria (Table 2, Figure 3).

Since week 40/2012, 55 antigenic characterisations of influenza viruses have been reported. Thirty-four have been characterised as A/Victoria/361/2011, two as A(H1)pdm09 A/California /7/2009-like and one A(H3) not attributed to any category. Ten were characterised as B/Wisconsin/1/2010-like (Yamagata lineage) and eight as B/Brisbane/60/2008-like (B/Victoria /2/87 lineage) (Figure 4).

Since week 40/2012, 84 genetic characterisations of influenza viruses have been reported for sentinel and non-sentinel specimens: 16 A(H1) viruses belonged to two genetic groups, 37 A(H3) to three groups, seven B (Victoria lineage) to one group and 24 B (Yamagata lineage) viruses to two different genetic groups. Most of the viruses fell within either the A/Victoria/361/2011 (H3N2) group 3C or the B (Yamagata) lineage clade representative B/Estonia/55669/2011 group (Figure 5).

More details on circulating viruses can be found in the November report prepared by the Community Network of Reference Laboratories (CNRL) coordination team. The viruses circulating this season remain well-matched with the 2012/13 seasonal vaccine viruses.

A total of 60 viruses have been tested for antiviral susceptibility and reported so far by seven EU/EEA countries: Denmark, Germany, the Netherlands, Norway, Spain, Sweden and the UK. None of the 27 A(H1N1)pdm09, 26 A(H3N2) and seven B viruses tested for susceptibility to neuraminidase inhibitors showed genetic (markers) or phenotypic (IC50) evidence for (highly) reduced inhibition. Five A(H1N1)pdm09 and 14 A(H3N2) viruses tested for M2-blocker susceptibility carried the S31N amino acid substitution in the M2 protein associated with M2-blocker resistance.

In week 50/2012, 13 countries reported 1 077 respiratory syncytial virus detections, which is substantially less than the previous week (Figure 6).

Table 2. Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40–50/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	55	222	161	735
A(H1)pdm09	28	73	60	213
A(H3)	26	25	87	176
A(sub-type unknown)	1	124	14	346
Influenza B	57	145	189	488
B(Vic) lineage	1	0	7	9
B(Yam) lineage	13	26	31	117
Unknown lineage	43	119	151	362
Total influenza	**112**	**367**	**350**	**1223**

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 40–50/2012

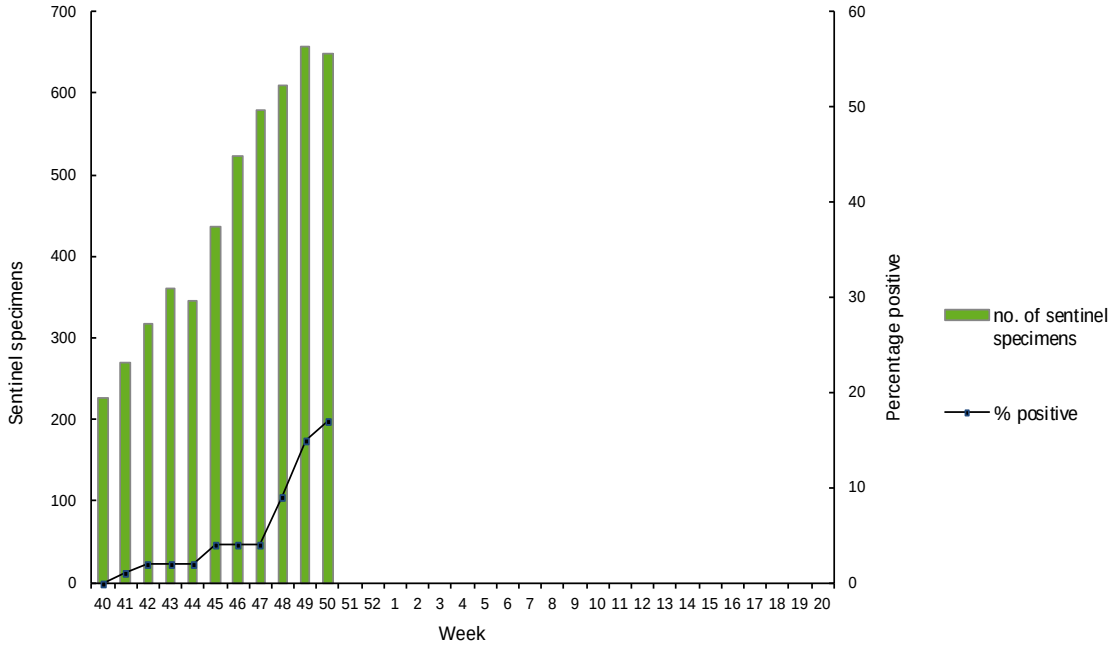


Figure 2. Number of sentinel specimens positive for influenza virus, by type, subtype and week of report, weeks 40–50/2012

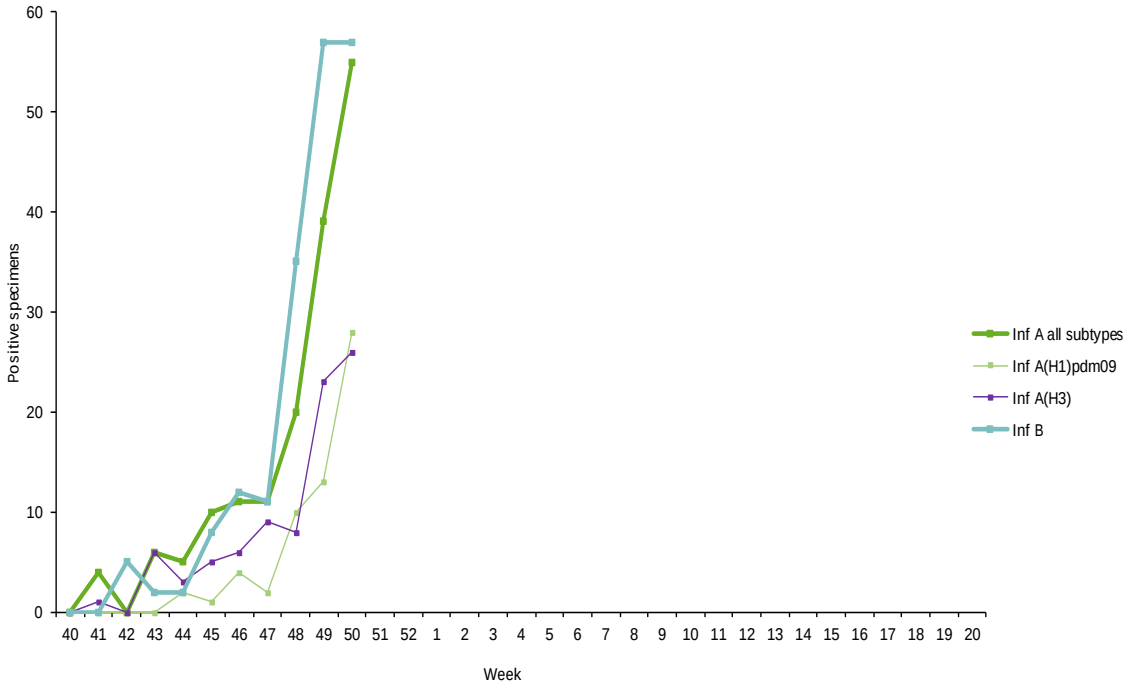


Figure 3. Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40–50/2012

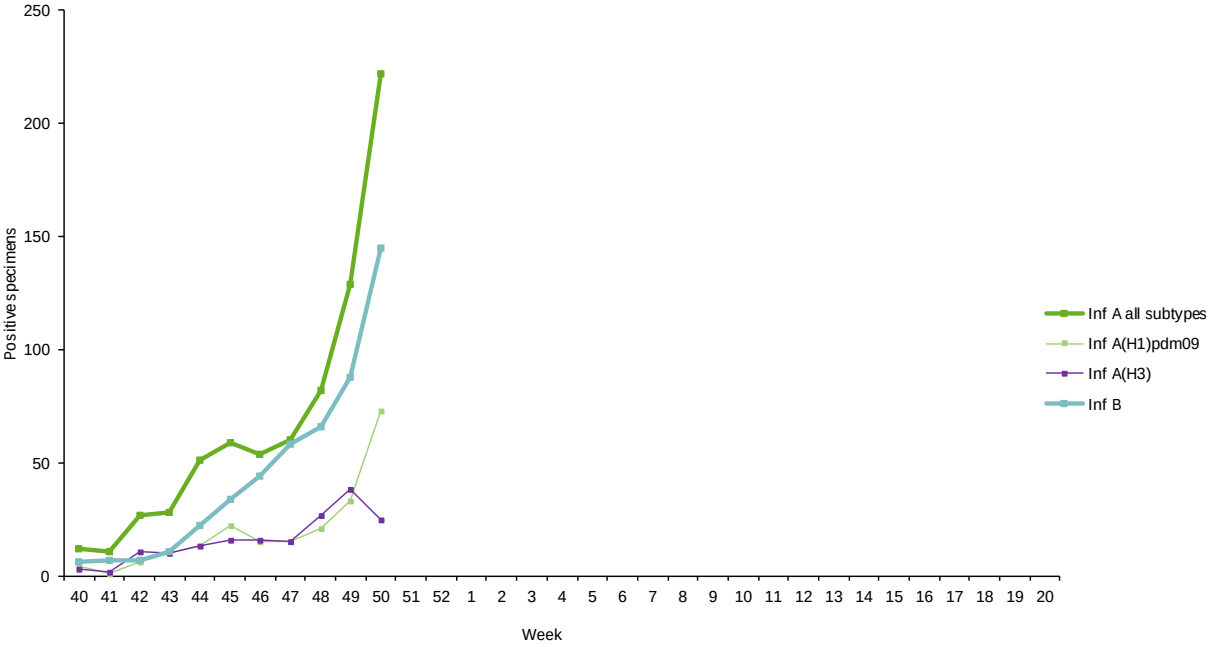


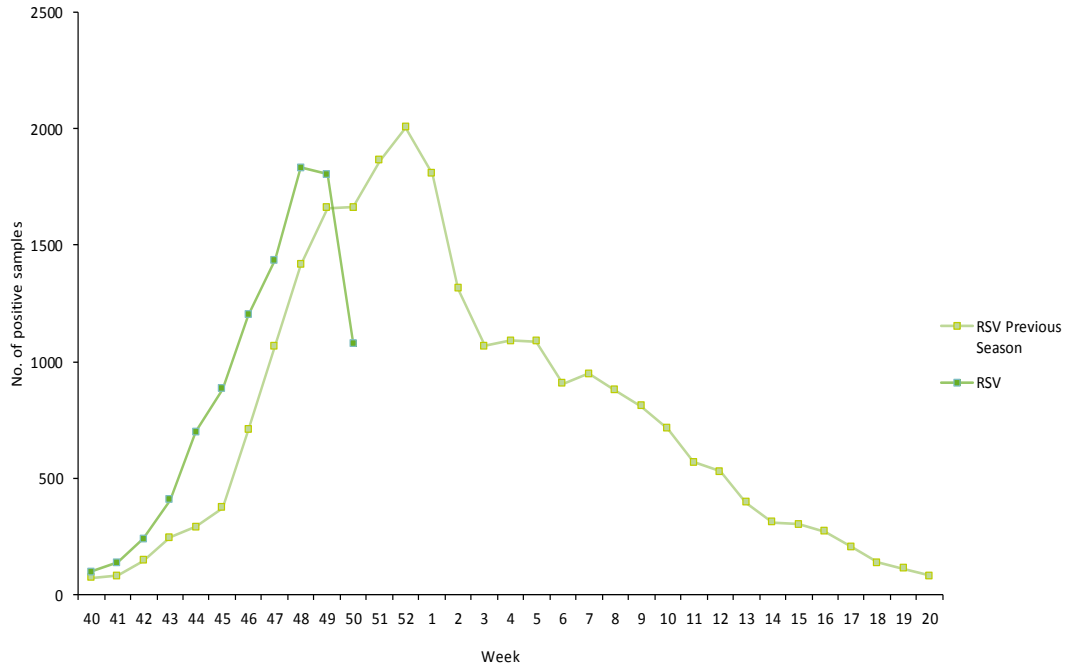
Table 3. Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40–50/2012

Antigenic group	Number of viruses
A(H1)pdm09 A/California/7/2009 (H1N1)-like	2
A(H3) A/Victoria/361/2011 (H3N2)-like	34
A(H3) not attributed to category	1
B/Brisbane/60/2008-like (B/Victoria/2/87 lineage)	8
B/Wisconsin/1/2010-like (B/Yamagata/16/88-lineage)	10

Table 4. Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40–50/2012

Phylogenetic group	Number of viruses
A(H1)pdm09 group 6 representative A/St Petersburg/27/2011	10
A(H1)pdm09 group 7 representative A/St Petersburg/100/2011	6
A(H3) clade repr. A/Victoria/208/2009 – A/Alabama/05/2010 group 5	11
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	25
B(Vic) lineage - clade representative B/Brisbane/60/2008	7
B(Yam)-lineage clade repr. B/Wisconsin/1/2010	8
B(Yam)-lineage clade repr. B/Estonia/55669/2011	16

Figure 4. Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40–50/2012



Country comments

Denmark: The Danish A(H3) viruses have at least seven discrepancies at important antigenic sites compared to the A/Victoria/361/2011 vaccine strain: R142G, N145S, T128A, Q156S, V186G, N278K,Y219S. The A(H3) viruses are most similar to American strains from 2012 (e.g. A/Pennsylvania/20/2012) and form a separate clade phylogenetically. They are most similar to the A/Hong Kong/8152/2012 in the GISAID H3 reference set and assigned as Clade 3C viruses.

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 50/2012, no hospitalised laboratory-confirmed influenza cases were reported.

Since week 40/2012, five hospitalised laboratory-confirmed influenza cases have been reported by France, Slovakia and Spain. One case involved an influenza B virus, and of four type A viruses detected in the other patients, one was A(H1)pdm09, one A(H3) and two were not subtyped (Tables 3 and 4).

Table 5. Cumulative number of hospitalised laboratory-confirmed influenza cases, weeks 40–50/2012

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
France	1				
Ireland	1				
Slovakia	1	0.02			5435273
Spain	4				
Sweden	1				
Total	**8**		**0**		

Table 6. Number of hospitalised laboratory-confirmed influenza cases by influenza type and subtype, week 50/2012 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A		6
A(H1)pdm09		2
A(H3)		2
A(sub-typing not performed)		2
Influenza B		2
Total		**8**

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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