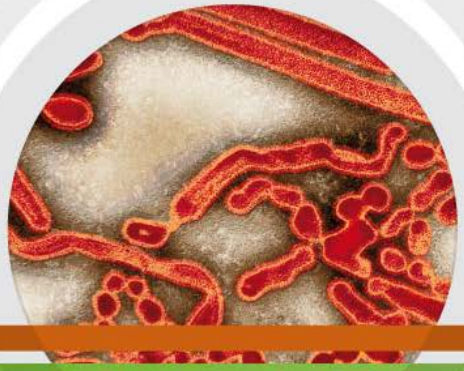


SURVEILLANCE REPORT

Weekly influenza surveillance overview

14 December 2012

Main surveillance developments in week 49/2012 (3–9 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 reporting on influenza surveillance in Europe for the 2012–13 season started in week 40/2012.

- In week 49/2012, all 24 countries reporting experienced low-intensity levels of influenza-like illness or acute respiratory infection. For the first time this season, the majority of the countries reported sporadic geographic spread and eight countries experienced increasing trends.
- Of 573 sentinel specimens tested in 24 countries, 76 (13.3%) were positive for influenza virus. This is the second consecutive week with a notable increase in the proportion of influenza-positive samples since the start of the season.
- Since week 40/2012, 53% of influenza virus detections in sentinel specimens have been type A and 47% type B viruses. Of the A viruses subtyped, 47% were A(H3) and 53% were A(H1).
- The number of respiratory syncytial virus (RSV) detections remained high.
- In week 49/2012, one hospitalised laboratory-confirmed influenza case due to influenza B virus infection was reported.
- The viruses circulating this season remain well-matched with the 2012/13 seasonal vaccine viruses. See the new November virus characterisation report.

Based on reports of local or sporadic spread from the majority of countries and the increasing proportion of specimens testing positive for influenza virus, the season of influenza transmission appears to have started in EU/EEA countries.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Clinical influenza activity of low intensity was notified by all 24 countries reporting, with the majority of them indicating sporadic geographic spread. For more information, **click here**.

Virological surveillance: Twenty-six countries reported virological data. Sentinel physicians collected 573 specimens, of which 76 (13.3%) tested positive for influenza virus. For more information, **click here**.

Hospital surveillance of laboratory-confirmed influenza cases: In week 49/2012, one hospitalised laboratory-confirmed influenza case was reported. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

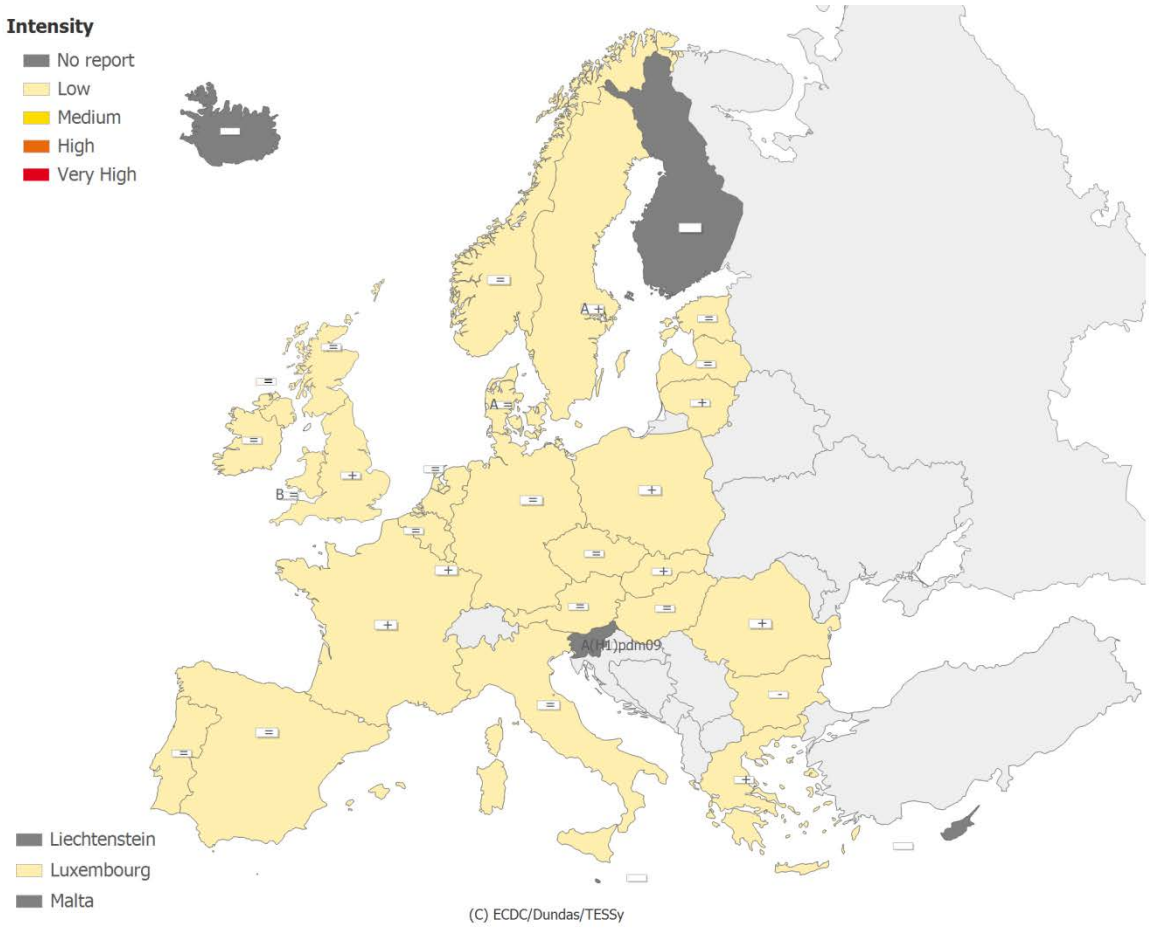
During week 49/2012, all 24 countries reporting clinical data experienced low-intensity influenza activity (Table 1, Map 1).

Geographic spread was reported as local by the UK and sporadic by 15 countries. The remaining eight countries reported no activity (Table 1, Map 2).

Stable trends in clinical activity were reported by 14 countries while increasing trends were reported by France, Greece, Lithuania, Luxembourg, Poland, Romania, Slovakia, Sweden and the UK. A decreasing trend was reported by Bulgaria (Table 1, Map 2).

The influenza season is starting in EU/EEA countries as the majority of countries reported local or sporadic spread in week 49/2012 and the proportion of specimens testing positive for influenza virus has increased for the second consecutive week, although the intensity remains low (Table 1).

Map 1. Intensity for week 49/2012

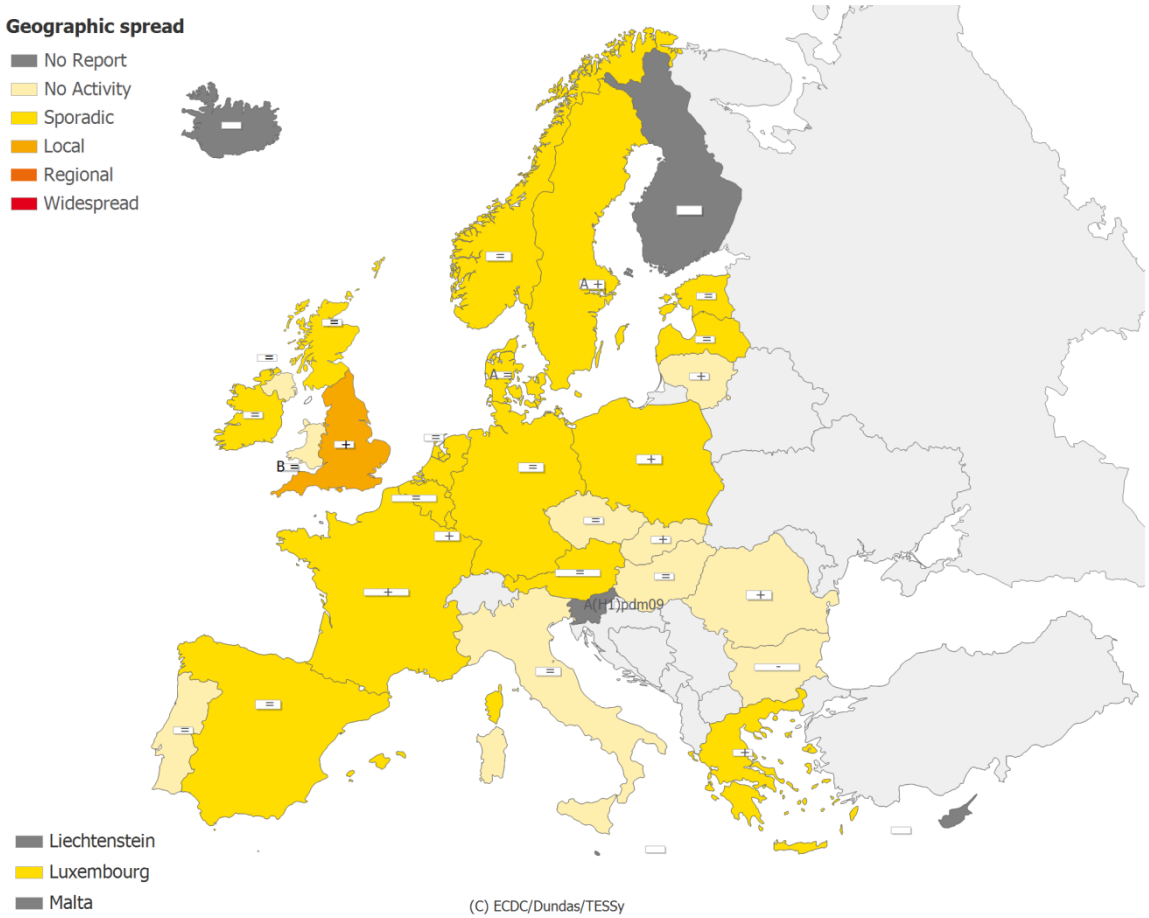


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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(H1)pdm09**	Type A, Subtype (H1)pdm09
		B	Type B

Map 2. Geographic spread for week 49/2012



* 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(H1)pdm09	Type A, Subtype (H1)pdm09
B	Type B

Table 1. Epidemiological and virological overview by country, week 49/2012

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	Sporadic	Stable	7	None	0.0	19.5	-	Graphs	Graphs
Belgium	Low	Sporadic	Stable	9	None	33.3	79.8	2049.1	Graphs	Graphs
Bulgaria	Low	No activity	Decreasing	16	None	0.0	-	927.2	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	No activity	Stable	11	None	0.0	35.5	980.5	Graphs	Graphs
Denmark	Low	Sporadic	Stable	4	A	75.0	34.4	-	Graphs	Graphs
Estonia	Low	Sporadic	Stable	2	None	0.0	6.3	247.8	Graphs	Graphs
Finland				6	None	0.0	-	-	Graphs	Graphs
France	Low	Sporadic	Increasing	100	None	20.0	-	2148.0	Graphs	Graphs
Germany	Low	Sporadic	Stable	91	None	11.0	-	1131.7	Graphs	Graphs
Greece	Low	Sporadic	Increasing	0	None	0.0	68.2	-	Graphs	Graphs
Hungary	Low	No activity	Stable	-	-	0.0	69.0	-	Graphs	Graphs
Iceland				-	-	0.0	-	-		
Ireland	Low	Sporadic	Stable	12	None	41.7	11.8	-	Graphs	Graphs
Italy	Low	No activity	Stable	17	None	5.9	114.7	-	Graphs	Graphs
Latvia	Low	Sporadic	Stable	1	None	100.0	0.0	1225.5	Graphs	Graphs
Lithuania	Low	No activity	Increasing	13	None	0.0	2.2	588.8	Graphs	Graphs
Luxembourg	Low	Sporadic	Increasing	12	None	16.7	-*	-*	Graphs	Graphs
Malta				0	None	0.0	-*	-*	Graphs	Graphs
Netherlands	Low	Sporadic	Stable	9	None	33.3	32.6	-	Graphs	Graphs
Norway	Low	Sporadic	Stable	8	None	12.5	33.7	-	Graphs	Graphs
Poland	Low	Sporadic	Increasing	19	None	5.3	147.1	-	Graphs	Graphs
Portugal	Low	No activity	Stable	2	None	0.0	11.7	-	Graphs	Graphs
Romania	Low	No activity	Increasing	16	-	0.0	1.8	629.1	Graphs	Graphs
Slovakia	Low	No activity	Increasing	5	None	0.0	136.5	1476.2	Graphs	Graphs
Slovenia				7	A(H1)pdm09	0.0	-	-	Graphs	Graphs
Spain	Low	Sporadic	Stable	45	None	13.3	15.0	-	Graphs	Graphs
Sweden	Low	Sporadic	Increasing	36	A	5.6	3.9	-	Graphs	Graphs
UK - England	Low	Local	Increasing	90	None	15.6	14.3	429.4	Graphs	Graphs
UK - Northern Ireland	Low	No activity	Increasing	2	None	0.0	15.1	468.1	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	28	None	7.1	11.2	488.7	Graphs	Graphs
UK - Wales	Low	No activity	Stable	5	B	40.0	6.6	-	Graphs	Graphs
Europe				**573**		**13.3**				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 49/2012, 26 countries reported virological data. Of 573 sentinel specimens tested, 76 (13.3%) were positive for influenza virus (Tables 1–2, Figure 1). This is the second consecutive week when an approximately 5% increase was seen compared with the previous week. In addition, 179 non-sentinel source specimens (specimens collected for diagnostic purposes in hospitals) were found to be positive for influenza virus (Table 2).
Of the 255 influenza viruses detected from sentinel and non-sentinel sources during week 49/2012, 136 (53.3%) were type A and 119 (46.7%) were type B. Of the 70 influenza A viruses subtyped, 37 (52.9%) were A(H1)pdm09 and 33 (47.1%) were A(H3). Thirteen B viruses were characterised further: 11 (84.6%) were of Yamagata lineage and two (15.4%) of Victoria lineage (Table 2, Figures 2 and 3).

Of the 218 influenza virus detections in sentinel specimens since week 40/2012, 101 (46.3%) were type A, and 117 (53.7%) were type B viruses. Of 88 influenza A viruses subtyped, 58 (65.9%) were A(H3) and 30 (34.1%) were A(H1)pdm09. Seventeen B viruses were characterised further: 12 (70.6%) were of Yamagata lineage and five (29.4%) were Victoria lineage (Table 2, Figure 2).

Of the 810 influenza viruses detected from non-sentinel sources since week 40/2012, 482 (59.5%) were type A, and 328 (40.5%) were type B. Of 253 type A viruses subtyped, 132 (52.2%) were A(H1)pdm09 and 121 (47.8%) A(H3). Eighty-five B viruses were characterised further: 73 (85.9%) were of Yamagata lineage and 12 (14.1%) were of Victoria lineage (Table 2, Figure 3).

Since week 40/2012, 44 antigenic characterisations of influenza viruses have been reported. Twenty-eight (63.6%) have been characterised as A/Victoria/361/2011 (H3N2)-like (vaccine virus); one as A(H1)pdm09 A/California/7/2009 (H1N1)-like (vaccine virus); six as B/Brisbane/60/2008-like (Victoria lineage); one as B/Estonia/55669/2011-like (Yamagata lineage)and seven as B/Wisconsin/1/2010-like (Yamagata lineage; vaccine virus). One A(H3) virus was not attributed to a category (Table 3).

Since week 40/2012, 63 genetic characterisations of influenza viruses have been reported for sentinel and non-sentinel specimens: ten A(H1) viruses belonged to two genetic groups, 29 A(H3) to three groups, seven B (Victoria lineage) to one group and 17 B (Yamagata lineage) viruses to three different genetic groups. Most of the viruses fell in the A(H3) clade representative A/Victoria/208/2009 – A/Victoria/361/2011 group 3C (Table 4).

More details on circulating viruses can be found in the new 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.
Since week 40/2012, 54 viruses have been tested for antiviral drug susceptibility. None of the 25 A(H1N1)pdm09, 22 A(H3N2) and seven B viruses tested for neuraminidase inhibitor susceptibility showed genetic or phenotypic 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 49/2012, 14 countries reported 1 638 respiratory syncytial virus detections. The number of RSV detections is still high and remained comparable to the number of RSV detections observed during the same period last year (Figure 4).

Table 2. Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40–49/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	34	102	101	482
A(H1)pdm09	11	26	30	132
A(H3)	20	13	58	121
A(sub-type unknown)	3	63	13	229
Influenza B	42	77	117	328
B(Vic) lineage	0	2	5	12
B(Yam) lineage	5	6	12	73
Unknown lineage	37	69	100	243
Total influenza	**76**	**179**	**218**	**810**

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 40–49/2012

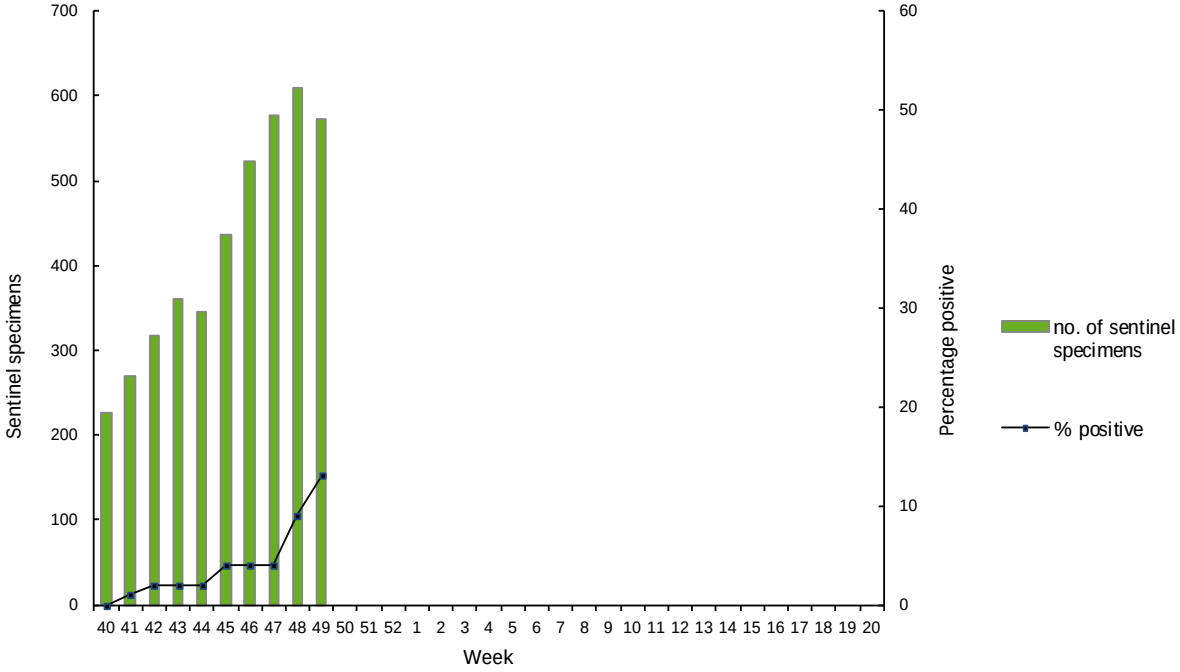


Figure 2. Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40–49/2012

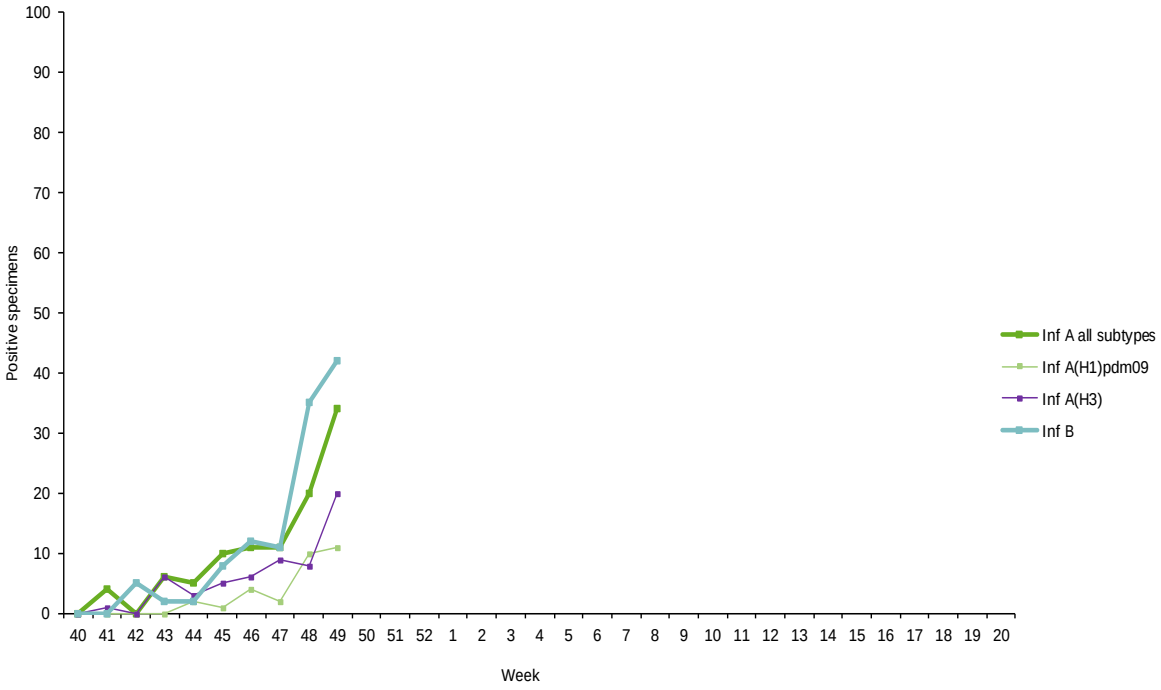


Figure 3. Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40–49/2012

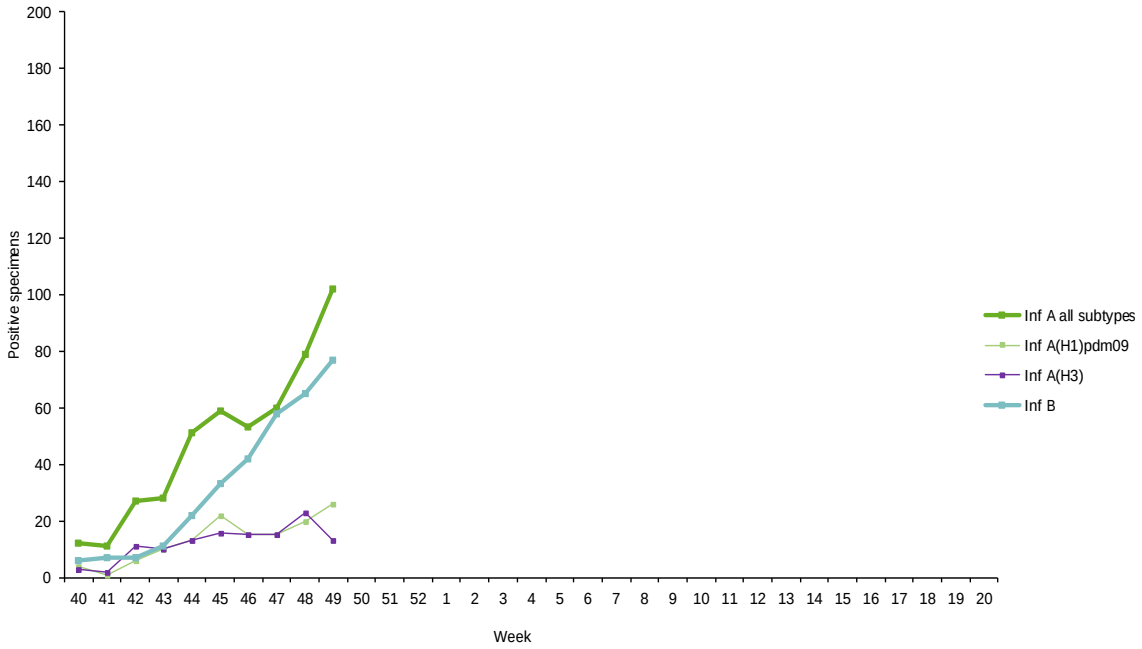


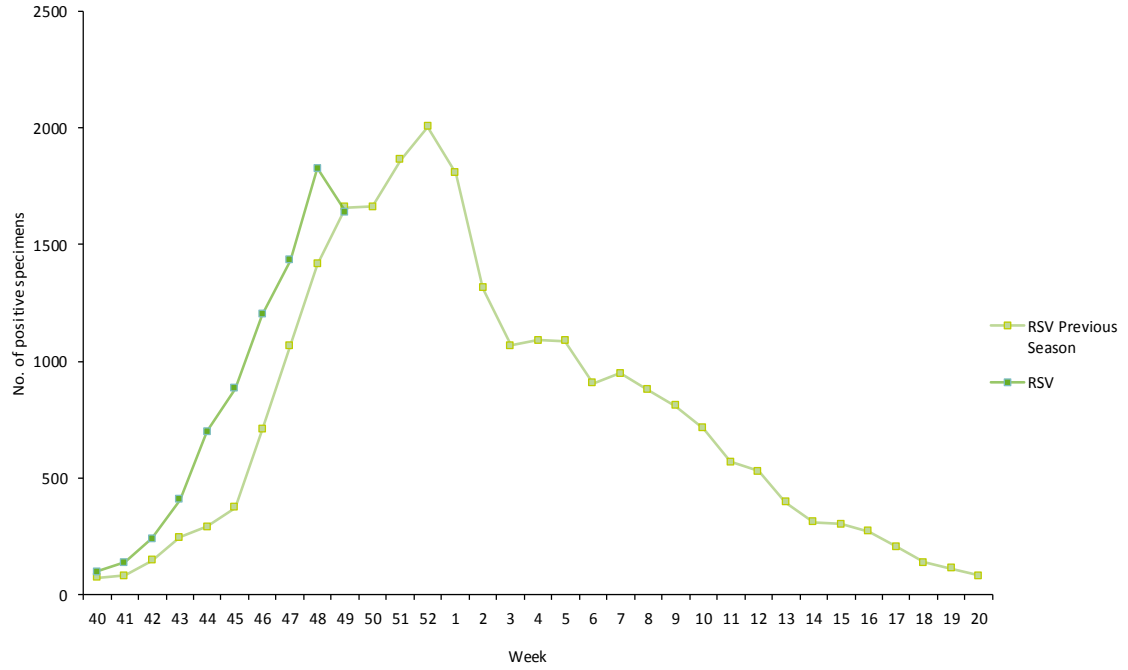
Table 3. Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40–49/2012

Antigenic group	Number of viruses
A(H1)pdm09 A/California/7/2009 (H1N1)-like	1
A(H3) A/Victoria/361/2011 (H3N2)-like	28
A(H3) not attributed to category	1
B/Brisbane/60/2008-like (B/Victoria/2/87 lineage)	6
B/Estonia/55669/2011-like (B/Yamagata/16/88-lineage)	1
B/Wisconsin/1/2010-like (B/Yamagata/16/88-lineage)	7

Table 4. Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40–49/2012

Phylogenetic group	Number of viruses
A(H1)pdm09 group 6 representative A/St Petersburg/27/2011	7
A(H1)pdm09 group 7 representative A/St Petersburg/100/2011	3
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	17
B(Vic) lineage - clade representative B/Brisbane/60/2008	7
B(Yam)-lineage clade repr. B/Wisconsin/1/2010	7
B(Yam)-lineage clade repr. B/Estonia/55669/2011	10

Figure 4. Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40–49/2012



Country comments

Norway: Moderate and increasing number of influenza virus detections. A(H1)pdm09, A(H3) and B Yamagata lineage viruses are circulating sporadically, with influenza B (Yamagata lineage) slightly more predominant than the others.

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 49/2012, one hospitalised laboratory-confirmed influenza case due to influenza B virus infection was reported (Table 6).

Since week 40/2012, eight hospitalised laboratory-confirmed influenza cases have been reported by France, Ireland, Slovakia, Spain and Sweden (Table 5). Two cases involved an influenza B virus, and of six type A viruses detected in the other patients, two were A(H1)pdm09, two A(H3) and two not subtyped (Table 6).

Table 5. Cumulative number of hospitalised laboratory-confirmed influenza cases by country reporting, weeks 40–49/2012

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 49/2012 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	1	2
Total	**1**	**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.