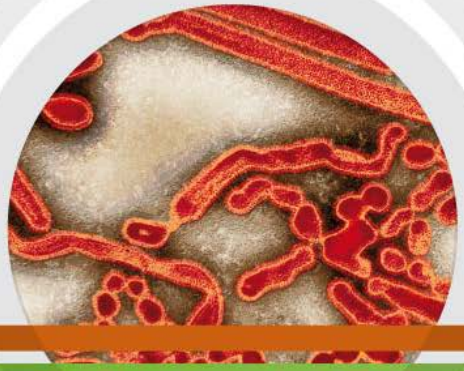


SURVEILLANCE REPORT

Weekly influenza surveillance overview

2 May 2014

Main surveillance developments in week 17/2014 (*21-27 April 2014*)

This first page contains the main developments for this week and can be printed separately or together with the more detailed information that follows.

For week 17/2014:

- Low intensity was reported by 24 countries and local or sporadic activity was reported by 16 countries.
- Of 93 sentinel specimens tested across 15 countries, 15 (16%) were positive for influenza virus. Fourteen (93%) were influenza A viruses.
- Fifteen hospitalised laboratory-confirmed influenza cases were reported by Ireland and the UK, 14 of which were admitted to intensive care units.

Overall, influenza activity and associated circulation of influenza viruses in reporting countries is declining.

Sentinel surveillance of influenza-like illness (ILI)/acute respiratory infection (ARI): Although low intensity was reported by all reporting countries, local to sporadic activity was reported by 16 countries. For more information, **click here**.

Virological surveillance: Since week 40/2013, of 7 014 sentinel specimens testing positive for influenza virus, 6 846 (98%) were type A and 168 (2%) were type B. For more information, **click here**.

Hospital surveillance of laboratory-confirmed influenza cases: Since week 40/2013, five countries have reported a total of 394 fatal cases with 391 (99%) being associated with influenza type A and three (1%) with influenza type B virus infections. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

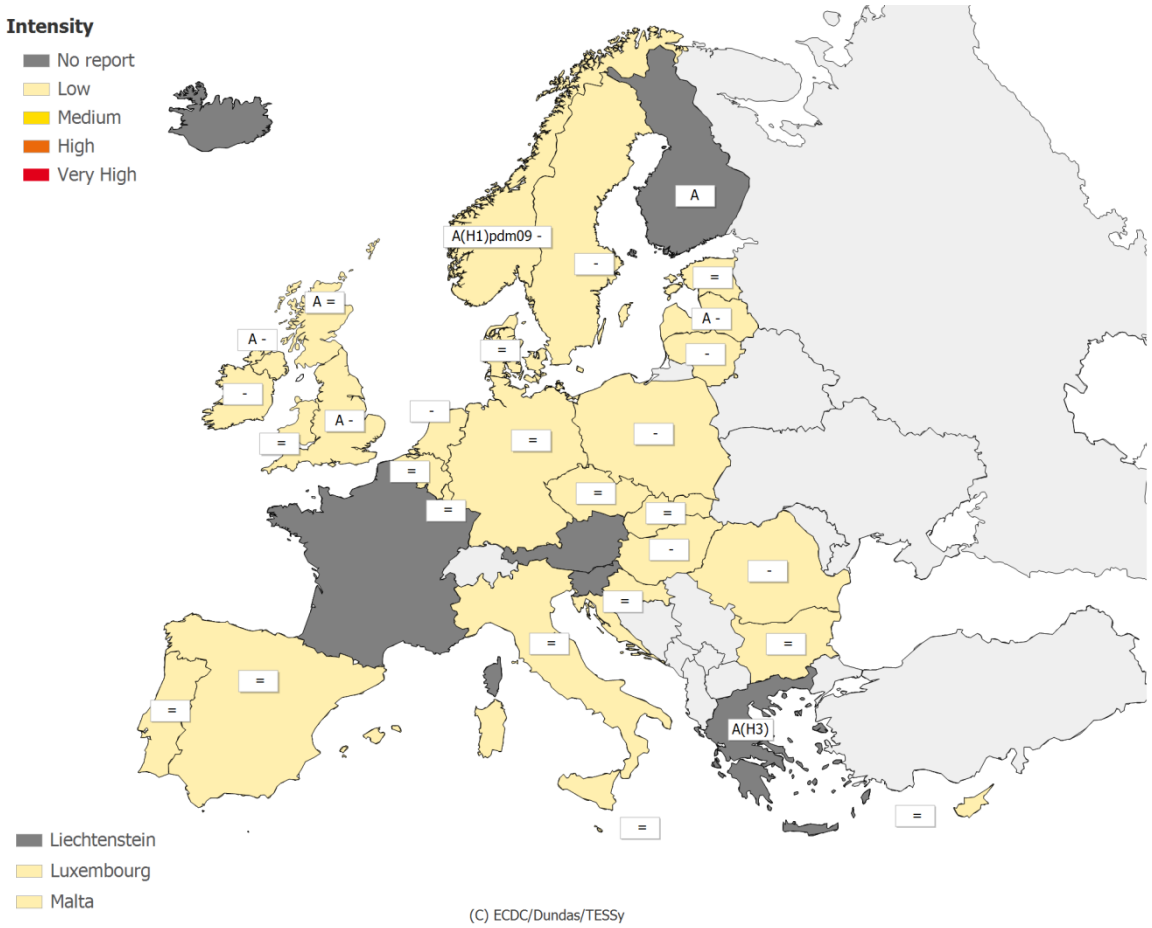
Weekly and seasonal analysis

For week 17/2014, clinical data were reported by 24 countries and all reported low intensity of influenza activity (Table 1, Map 1).

Geographic patterns of influenza activity varied across Europe: local or sporadic activity was reported by 16 countries while eight countries (Bulgaria, Cyprus, the Czech Republic, Hungary, Italy, Malta, Portugal and Romania) reported no activity (Table 1, Map 2).

Stable or decreasing trends were reported by 24 countries (Table 1, Map 2).

Map 1. Intensity for week 17/2014

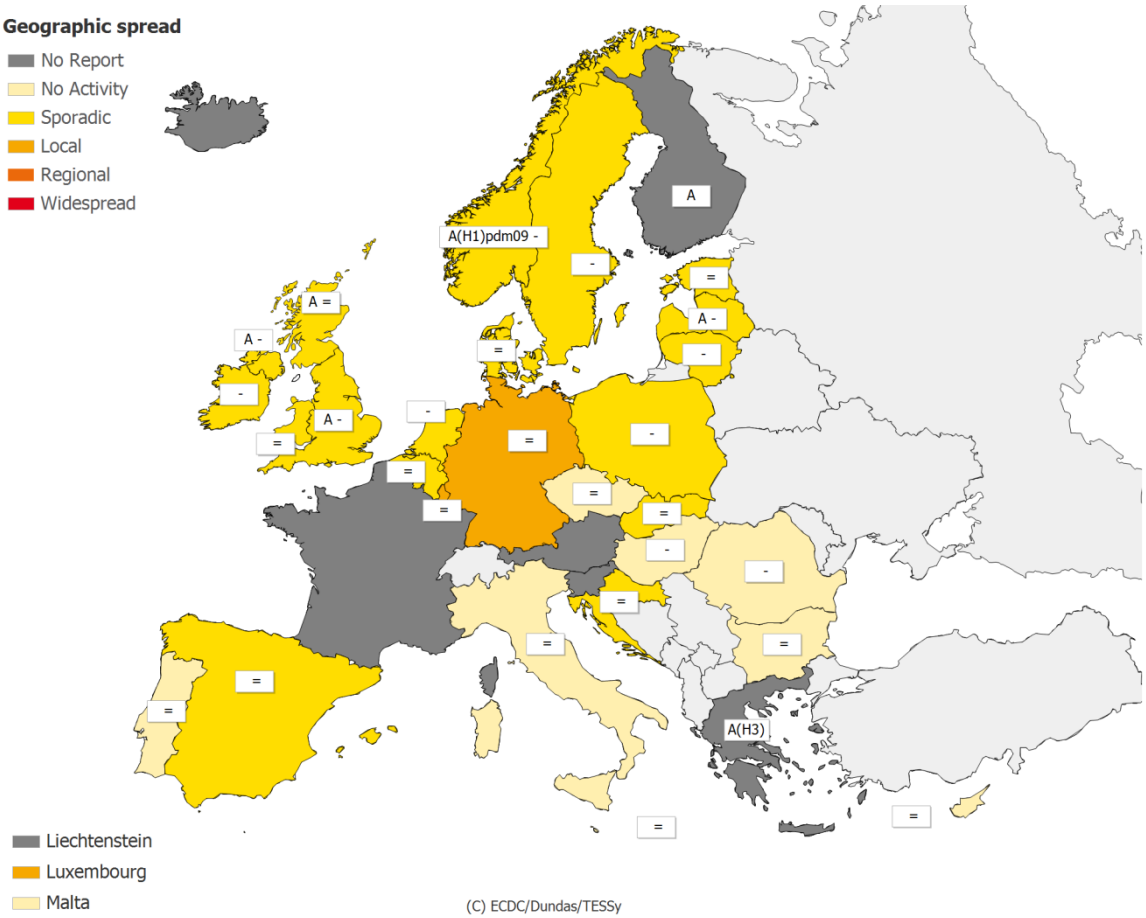


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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
		A(H3)	Type A, Subtype H3

Map 2. Geographic spread for week 17/2014



* 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
A(H3)	Type A, Subtype H3

Table 1. Epidemiological and virological overview by country, week 17/2014

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				-	-	0.0	-	-		
Belgium	Low	Sporadic	Stable	6	None	33.3	20.5	1089.0	Graphs	Graphs
Bulgaria	Low	No activity	Stable	-	-	0.0	-	444.8	Graphs	Graphs
Croatia	Low	Sporadic	Stable	-	-	0.0	-	-	Graphs	Graphs
Cyprus	Low	No activity	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic	Low	No activity	Stable	-	-	0.0	14.2	673.3	Graphs	Graphs
Denmark	Low	Sporadic	Stable	2	None	0.0	9.0	-	Graphs	Graphs
Estonia	Low	Sporadic	Stable	5	None	20.0	11.8	268.7	Graphs	Graphs
Finland				7	A	28.6	-	-	Graphs	Graphs
France				-	-	0.0	-	-		
Germany	Low	Local	Stable	27	None	7.4	-	637.4	Graphs	Graphs
Greece				0	A(H3)	0.0	-	-	Graphs	Graphs
Hungary	Low	No activity	Decreasing	4	None	0.0	21.3	-	Graphs	Graphs
Iceland				0	-	0.0	-	-	Graphs	Graphs
Ireland	Low	Sporadic	Decreasing	3	None	33.3	3.1	-	Graphs	Graphs
Italy	Low	No activity	Stable	-	-	0.0	45.1	-	Graphs	Graphs
Latvia	Low	Sporadic	Decreasing	0	A	0.0	0.9	666.4	Graphs	Graphs
Lithuania	Low	Sporadic	Decreasing	-	-	0.0	3.4	399.8	Graphs	Graphs
Luxembourg	Low	Local	Stable	5	-	20.0	-*	-*	Graphs	Graphs
Malta	Low	No activity	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Netherlands	Low	Sporadic	Decreasing	3	None	33.3	29.2	-	Graphs	Graphs
Norway	Low	Sporadic	Decreasing	1	A(H1)pdm09	100.0	18.3	-	Graphs	Graphs
Poland	Low	Sporadic	Decreasing	2	None	0.0	188.0	-	Graphs	Graphs
Portugal	Low	No activity	Stable	0	None	0.0	0.0	-	Graphs	Graphs
Romania	Low	No activity	Decreasing	0	None	0.0	0.4	418.6	Graphs	Graphs
Slovakia	Low	Sporadic	Stable	3	None	66.7	90.6	1192.2	Graphs	Graphs
Slovenia				0	None	0.0	-	-	Graphs	Graphs
Spain	Low	Sporadic	Stable	9	None	11.1	4.4	-	Graphs	Graphs
Sweden	Low	Sporadic	Decreasing	2	None	0.0	1.7	-	Graphs	Graphs
UK - England	Low	Sporadic	Decreasing	6	A	0.0	0.4	165.3	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Decreasing	0	A	0.0	10.7	227.0	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	7	A	0.0	6.1	354.1	Graphs	Graphs
UK - Wales	Low	Sporadic	Stable	1	-	100.0	2.9	-	Graphs	Graphs
Europe				**93**		**16.1**				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 and seasonal analysis

For week 17/2014, 93 sentinel specimens were tested across 15 countries, 15 (16%) were positive for influenza virus (Tables 1–2, Figures 1–2), a decrease on the previous week with half as many samples tested (Figure 1). Of the influenza virus positive specimens, 14 (93%) were type A and one (7%) was type B. Of ten type A viruses subtyped, seven were A(H3) and three were A(H1)pdm09 (Tables 1–2).

Since week 40/2013, of 7 014 sentinel specimens testing positive for influenza virus, 6 846 (98%) were type A and 168 (2%) were type B. Of the 6 344 subtyped influenza viruses, 3 399 (54%) were A(H1)pdm09 and 2 945 (46%) were A(H3). Countries have reported variable patterns of A(H1)pdm09 and A(H3) being the dominant subtype (Table 1 and Map 2). Non-sentinel virus detections are summarised in Table 2.

The results of antigenic and genetic characterisation of sentinel and non-sentinel viruses are displayed in Tables 3 and 4. Since week 40/2013, of the 1 548 antigenically characterised viruses, 1 538 (99%) were similar to the current vaccine viruses recommended by WHO, and 10 (1%) were reported to be non-attributable to a category (Table 3). More details on viruses circulating since September 2013 can be found in the WHO CC Report, February 2014.

Since week 40/2013, 1 028 A(H1)pdm09, 346 A(H3) and 57 type B viruses have been tested for susceptibility to the neuraminidase inhibitors oseltamivir and zanamivir by genetic and/or phenotypic methods. Fifteen A(H1N1)pdm09 viruses carried the NA-H275Y amino acid substitution associated with highly reduced inhibition by oseltamivir. One of these viruses showed highly reduced inhibition by oseltamivir and normal inhibition by zanamivir. However, in 11 of the 15 cases, virus carrying the NA-H275Y substitution was detected, mixed with NA-275H oseltamivir normal inhibited wild type virus in the clinical specimen. The median proportion of NA-H275Y was 35% (range 18–80%). One A(H3N2) virus carrying the NA-E119V amino acid substitution showed reduced inhibition by oseltamivir in phenotypic testing and normal inhibition by zanamivir.

For week 17/2014, 12 countries reported 142 respiratory syncytial virus detections, a return to levels usually seen outside the epidemic period.

Table 2. Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2013–17/2014

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	14	299	6846	25896
A(H1)pdm09	3	57	3399	11011
A(H3)	7	21	2945	4401
A(subtype unknown)	4	221	502	10484
Influenza B	1	51	168	1092
B(Vic) lineage	0	0	11	7
B(Yam) lineage	1	1	56	139
Unknown lineage	0	50	101	946
Total influenza	**15**	**350**	**7014**	**26988**

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 40/2013–17/2014

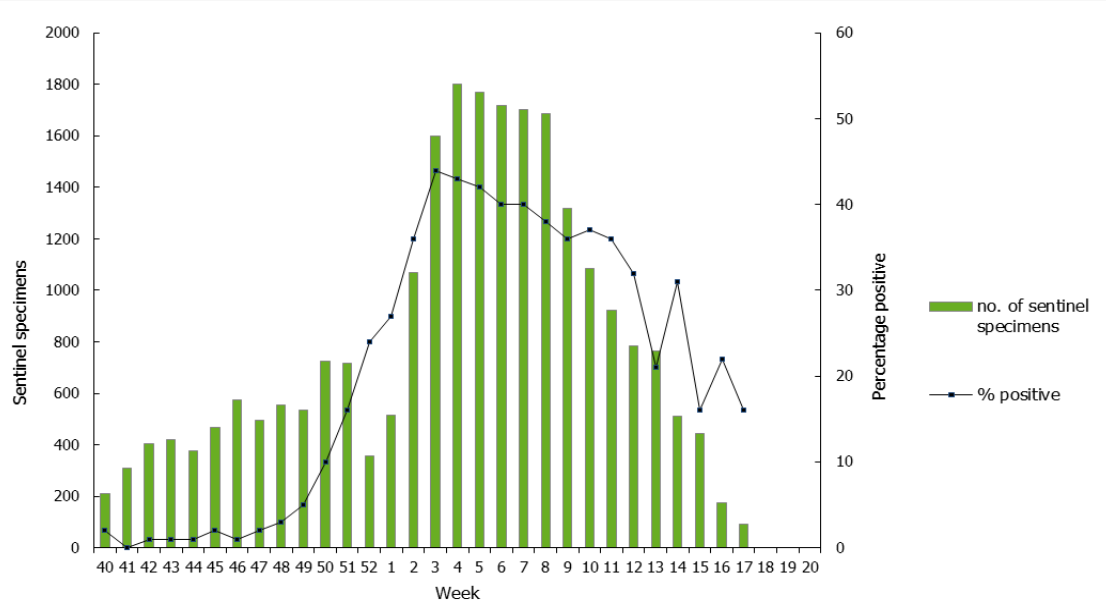


Figure 2. Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40/2013–17/2014

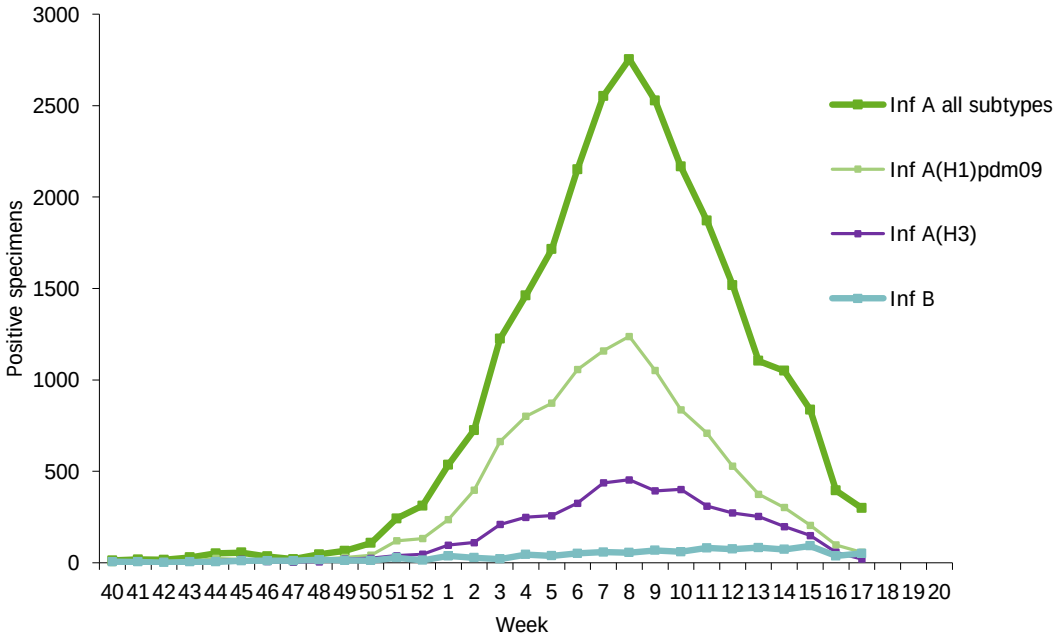


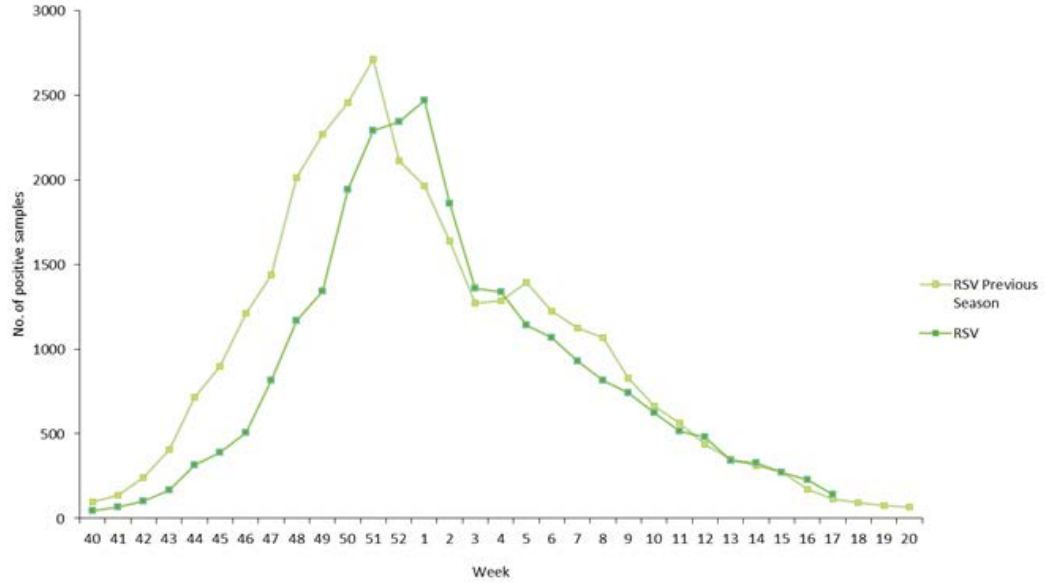
Table 3. Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2013–17/2014

Antigenic group	Number of viruses
A(H1)pdm09 A/California/7/2009 (H1N1)-like	852
A(H1)pdm09 not attributed to category	6
A(H3) A/Texas/50/2012 (H3N2)-like	641
A(H3) not attributed to category	4
B/Brisbane/60/2008-like (B/Victoria/2/87 lineage)	18
B/Massachusetts/02/2012-like (B/Yamagata/16/88-lineage)	24
B/Wisconsin/1/2010-like (B/Yamagata/16/88-lineage)	3

Table 4. Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2013–17/2014

Phylogenetic group	Number of viruses
A(H1)pdm09 clade repr. A/California/7/2009 - A/St Petersburg/27/2011 group (6)	431
A(H3) clade representative A/Perth/16/2009 – A/Texas/50/2012 subgroup(3C)	428
B(Vic)-lineage clade 1A representative B/Brisbane/60/2008	8
B(Yam)-lineage clade 2 representative B/Massachusetts/02/2012	15
B(Yam)-lineage clade 3 representative B/Wisconsin/1/2010	26

Figure 3. Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2013–17/2014



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. The non-sentinel part of the surveillance system comprises viruses submitted from hospital and peripheral diagnostic laboratories to the influenza-specific reference laboratories for (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 17/2014, 15 hospitalised laboratory-confirmed influenza cases were reported by two countries (Ireland and the UK). All 15 patients were infected by influenza A viruses and 14 were admitted to intensive care units (ICU) (Table 5).

Since week 40/2013, eight countries have reported 4 689 hospitalised, laboratory-confirmed influenza cases: 4 633 (99%) were related to influenza type A and 56 (1%) to influenza type B virus infections (Table 5). Of 3 175 subtyped influenza A viruses, 2 350 (74%) were A(H1)pdm09 and 825 (26%) were A(H3). A higher proportion of A(H1)pdm09 viruses has been detected in patients in ICUs, 1 373 (85%) of 1 606 subtyped compared to 977 (62%) of 1 569 subtyped viruses in patients in regular wards.

Of the 3 798 hospitalised cases with reported age, 1 412 (37%) were 40–64 years old and 1 405 (37%) were over 64 years of age, proportions that have been seen throughout the season.

Five countries reported a total of 394 fatal cases (Table 6); 391 (99%) were associated with influenza type A and three (1%) with influenza type B virus infections. Of 285 influenza A viruses subtyped from fatal cases, 230 (81%) were A(H1)pdm09 and 55 (19%) were A(H3). Patient age was reported for 390 of the fatal cases: 208 (53%) were 65 years or older.

Table 5. Number of hospitalised, laboratory-confirmed influenza cases by influenza type and subtype, week 17/2014 and cumulative since week 40/2013

Pathogen	Number of cases admitted to ICU during current week	Cumulative number of cases admitted to ICU since week 40/2013	Number of cases admitted to other wards during current week	Cumulative number of cases admitted to other wards since week 40/2013
Influenza A	14	2 462	0	2 171
A(H1)pdm09	7	1 373	0	977
A(H3)	0	233	0	592
A (subtyping not performed)	7	856	0	602
Influenza B	0	32	1	24
Total	**14**	**2 494**	**1**	**2 195**

Table 6. Cumulative number of hospitalised laboratory-confirmed influenza cases, weeks 40/2013–17/2014

Country	Number of cases admitted to ICU	Number of fatal cases reported in ICU	Number of cases admitted to other wards	Number of fatal cases reported in other wards
Finland	23	-*	-	-
France	632	87	-	-
Ireland	80	14	581	3
Romania	30	10	33	1
Slovakia	-	-	4	-
Spain	801	172	1 577	102
Sweden	60	5	-	-
UK	868	-	-	-
Total	**2 494**	**288**	**2 195**	**106**

**Not reported*

Description of the system

A subset of EU countries reports case-based severe influenza data to ECDC every week. Case definitions, populations under surveillance and data formats differ among these countries (Table 7). In order to make the data more comparable and pool them at EU level, only hospitalised, laboratory-confirmed influenza cases are included in the weekly data analysis and displayed in this report.

Table 7. Main characteristics of severe influenza surveillance systems

Country	Case definition	Population under surveillance	Type of surveillance	Data format
Finland	Lab-confirmed, hospitalised	ICU**	Comprehensive	Case-based
France	Lab-confirmed, hospitalised	ICU	Comprehensive	Case-based
Ireland	Lab-confirmed, hospitalised	All wards	Comprehensive	Case-based
Romania	SARI*, hospitalised	All wards	Sentinel	Case-based
Spain	Lab-confirmed, hospitalised	All wards	Sentinel	Case-based
Sweden	Lab-confirmed, hospitalised	ICU	Comprehensive	Case-based
United Kingdom	Lab-confirmed, hospitalised	ICU	Comprehensive	Aggregated

**Severe acute respiratory infection*

***Intensive care unit*

The EuroMOMO mortality monitoring system

For week 17/2014, all-cause mortality has been within the normal range for all reporting countries.

Further details are available on http://www.euromomo.eu/)

This report was written by an editorial team at the European Centre for Disease Prevention and Control (ECDC): Cornelia Adlhoch, Eeva Broberg and René Snacken. The bulletin text was reviewed by European Reference Laboratory Network for Human Influenza (ERLI-Net) coordination team: Adam Meijer, Rod Daniels, John McCauley and Maria Zambon. On behalf of the EISN members, the bulletin text was reviewed by Maja Sočan (Nacionalni inštitut za javno zdravje, Ljubljana), Allison Waters (University College Dublin) and Tyra Grove Krause (Statens Serum Institut, Copenhagen). In addition, the report is reviewed by experts of WHO Regional Office for Europe.