SURVEILLANCE REPORT

Weekly influenza surveillance overview

23 May 2014

Main surveillance developments in week 20/2014 (*12–18 May 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 20/2014:

- Low-intensity influenza activity was reported by 25 reporting countries.
- Of 68 sentinel specimens tested across 17 countries, six (9%) were positive for influenza virus.
- No hospitalised, laboratory-confirmed influenza cases were reported.

With influenza activity continuing to decline in all reporting countries, after five months of active transmission, the 2013–14 influenza season is coming to an end. During this season, A(H1N1)pdm09 and A(H3N2) viruses co-circulated in almost equal proportions. The intensity of the season was low in many countries throughout the season and only reached high intensity in three countries.

This is the last weekly report for the 2013–14 influenza season. The next report will be issued for data covering weeks 21–30/2014.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Low-intensity influenza activity was reported by all reporting countries, with the majority of them indicating stable or decreasing trends. For more information, **click here**.

Virological surveillance: Since week 40/2013, of 7 083 sentinel specimens testing positive for influenza virus, 6 906 (98%) were type A and 177 (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 421 fatal cases, 416 (99%) of which were associated with influenza virus type A infection and four (1%) with influenza virus type B infection. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

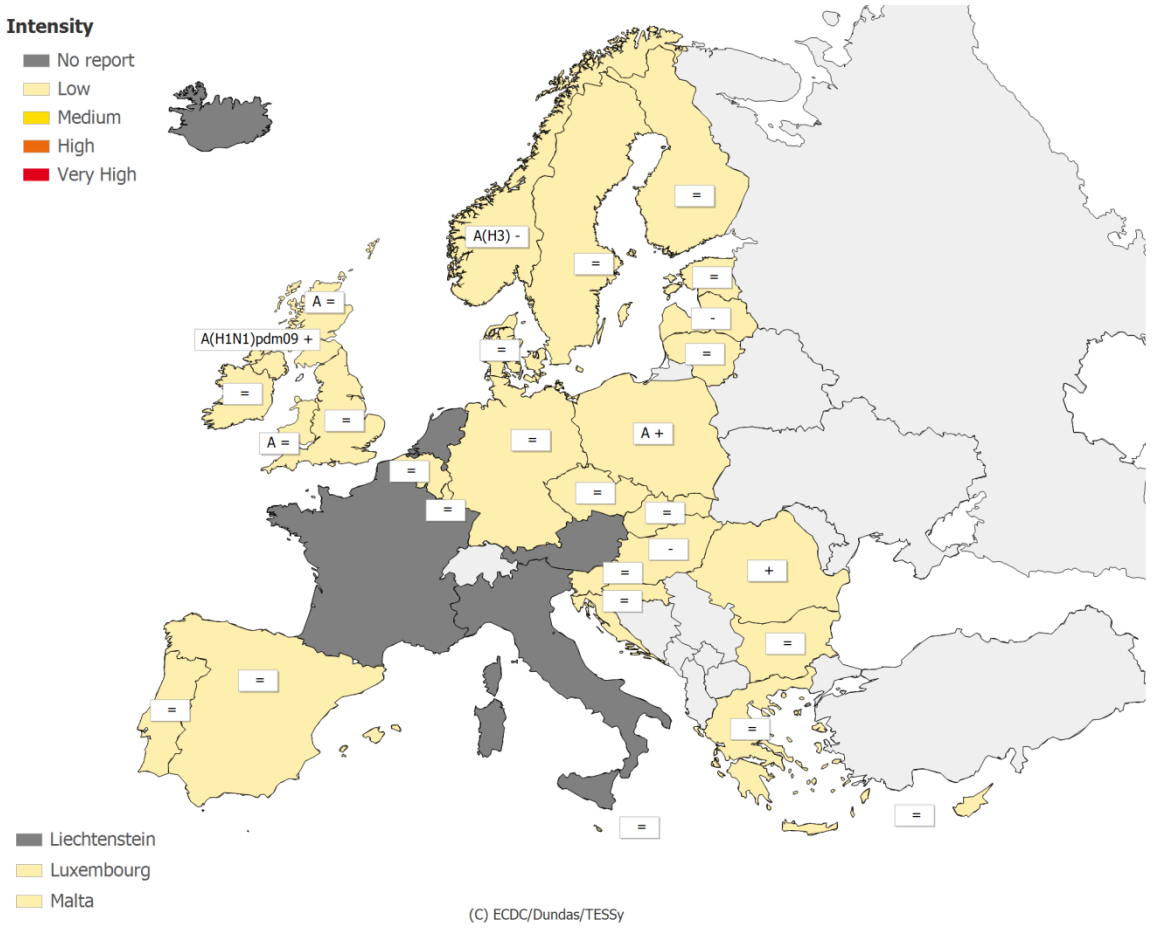
Weekly and seasonal analysis

For week 20/2014, clinical data were reported by 25 countries and all reported low intensity of influenza activity (Table 1, Map 1).

Geographic patterns of influenza activity were reported as sporadic by seven countries (Croatia, Germany, Latvia, Lithuania, Norway, Poland and the UK). The remaining eighteen countries reported no activity (Table 1, Map 2).

Stable or decreasing trends were reported by 22 countries and the UK (England, Scotland and Wales). Poland, Romania and the UK (Northern Ireland) reported increasing trends (Table 1, Map 2).

Map 1. Intensity for week 20/2014

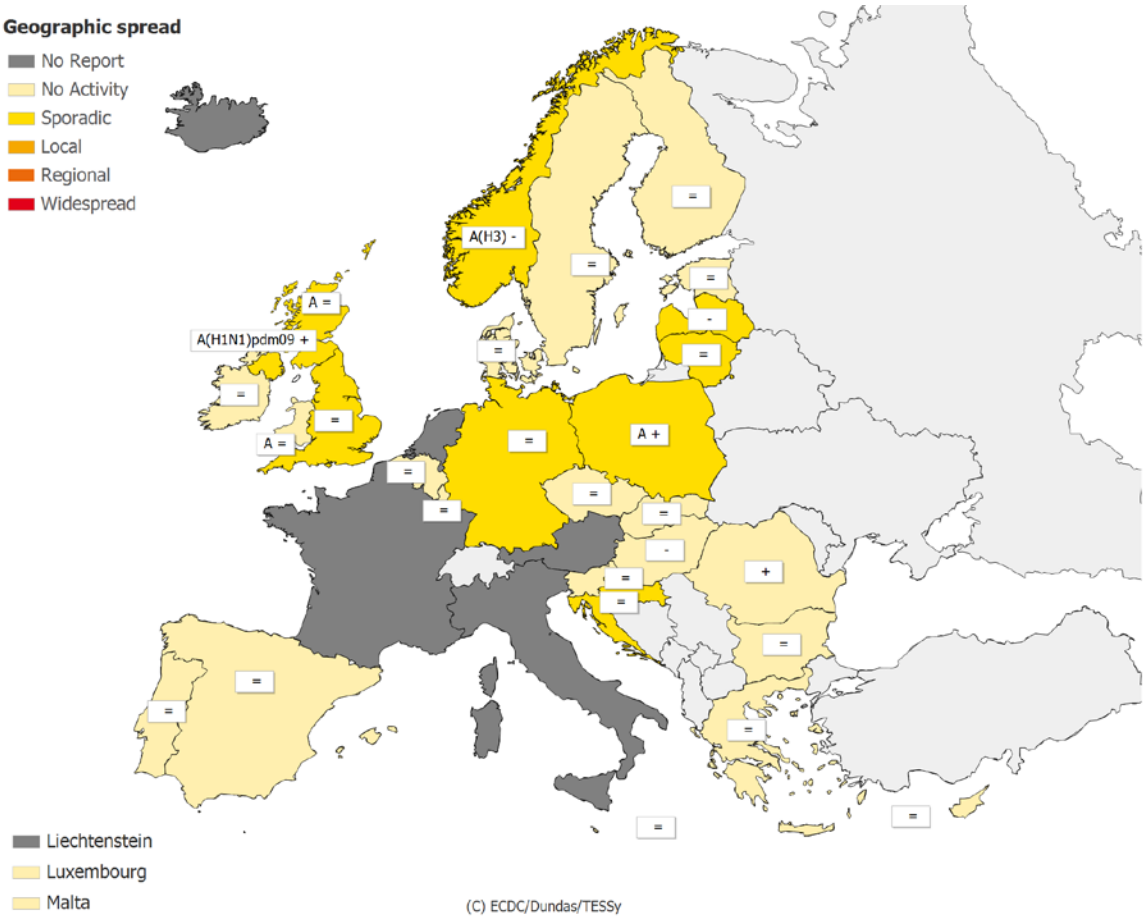


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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 (H1N1)pdm09**	Type A, Subtype (H1N1)pdm09
		A(H3)	Type A, Subtype H3

Map 2. Geographic spread for week 20/2014



* 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 (H1N1)pdm09	Type A, Subtype (H1N1)pdm09
A(H3)	Type A, Subtype H3

Table 1. Epidemiological and virological overview by country, week 20/2014

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	No activity	Stable	5	None	0.0	13.9	1404.6	Graphs	Graphs
Bulgaria	Low	No activity	Stable	0	None	0.0	-	387.6	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	None	0.0	11.3	639.1	Graphs	Graphs
Denmark	Low	No activity	Stable	1	None	0.0	12.8	-	Graphs	Graphs
Estonia	Low	No activity	Stable	1	None	0.0	4.5	200.2	Graphs	Graphs
Finland	Low	No activity	Stable	2	None	0.0	-	-	Graphs	Graphs
France				-	-	0.0	-	-		
Germany	Low	Sporadic	Stable	20	None	5.0	-	684.9	Graphs	Graphs
Greece	Low	No activity	Stable	0	None	0.0	47.5	-	Graphs	Graphs
Hungary	Low	No activity	Decreasing	0	None	0.0	8.6	-	Graphs	Graphs
Iceland				0	-	0.0	-	-	Graphs	Graphs
Ireland	Low	No activity	Stable	1	None	100.0	1.3	-	Graphs	Graphs
Italy				-	-	0.0	-	-		
Latvia	Low	Sporadic	Decreasing	0	None	0.0	0.0	563.1	Graphs	Graphs
Lithuania	Low	Sporadic	Stable	1	-	100.0	0.9	396.7	Graphs	Graphs
Luxembourg	Low	No activity	Stable	2	-	0.0	-*	-*	Graphs	Graphs
Malta	Low	No activity	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Netherlands				4	None	0.0	-	-	Graphs	Graphs
Norway	Low	Sporadic	Decreasing	2	A(H3)	50.0	19.5	-	Graphs	Graphs
Poland	Low	Sporadic	Increasing	0	A	0.0	216.7	-	Graphs	Graphs
Portugal	Low	No activity	Stable	1	None	100.0	6.3	-	Graphs	Graphs
Romania	Low	No activity	Increasing	2	None	0.0	0.3	514.9	Graphs	Graphs
Slovakia	Low	No activity	Stable	3	None	0.0	96.6	1231.4	Graphs	Graphs
Slovenia	Low	No activity	Stable	2	None	0.0	0.0	617.1	Graphs	Graphs
Spain	Low	No activity	Stable	8	None	12.5	2.1	-	Graphs	Graphs
Sweden	Low	No activity	Stable	2	None	0.0	1.8	-	Graphs	Graphs
UK - England	Low	Sporadic	Stable	0	None	0.0	0.9	186.0	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Increasing	2	A(H1N1)pdm09	0.0	11.2	264.1	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	9	A	0.0	2.9	297.3	Graphs	Graphs
UK - Wales	Low	No activity	Stable	0	A	0.0	2.2	-	Graphs	Graphs
Europe				68		8.8				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

The system 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 20/2014, of 68 sentinel specimens tested across 17 countries, six (9%) were positive for influenza virus: five type A and one type B (Tables 1–2, Figures 1–2). Four of the type A viruses were subtype A(H3) (Table 2).

Since week 40/2013, of 7 083 sentinel specimens testing positive for influenza virus, 6 906 (98%) were type A and 177 (2%) were type B. Of the 6 462 subtyped influenza A viruses, 3 451 (53%) were A(H1)pdm09 and 3 011 (47%) were A(H3). 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. None of the 1 456 viruses characterised antigenically since week 40/2013 have differed significantly from the current vaccine viruses recommended by WHO, but nine were reported as being unattributable to a category (Table 3). More details on viruses circulating since September 2013 can be found in the April 2014 virus characterisation report. Please see also the larger virological overview here.

Since week 40/2013, 1 177 A(H1N1)pdm09 viruses, 402 A(H3N2) and 72 influenza B viruses have been tested for susceptibility to neuraminidase inhibitors (NAIs) 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, mixtures of wild-type NA-275H (showing normal inhibition by oseltamivir) and NA-H275Y substitution viruses were detected in the corresponding clinical specimens. 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 20/2014, nine countries reported 105 respiratory syncytial virus (RSV) detections, a level usually seen outside the RSV epidemic period (Figure 3).

Table 2. Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2013–20/2014

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	5	170	6906	27157
A(H1)pdm09	0	22	3451	11229
A(H3)	4	28	3011	4723
A(sub-type unknown)	1	120	444	11205
Influenza B	1	33	177	1263
B(Vic) lineage	0	0	11	7
B(Yam) lineage	0	4	61	165
Unknown lineage	1	29	105	1091
Total influenza	**6**	**203**	**7083**	**28420**

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 40/2013–20/2014

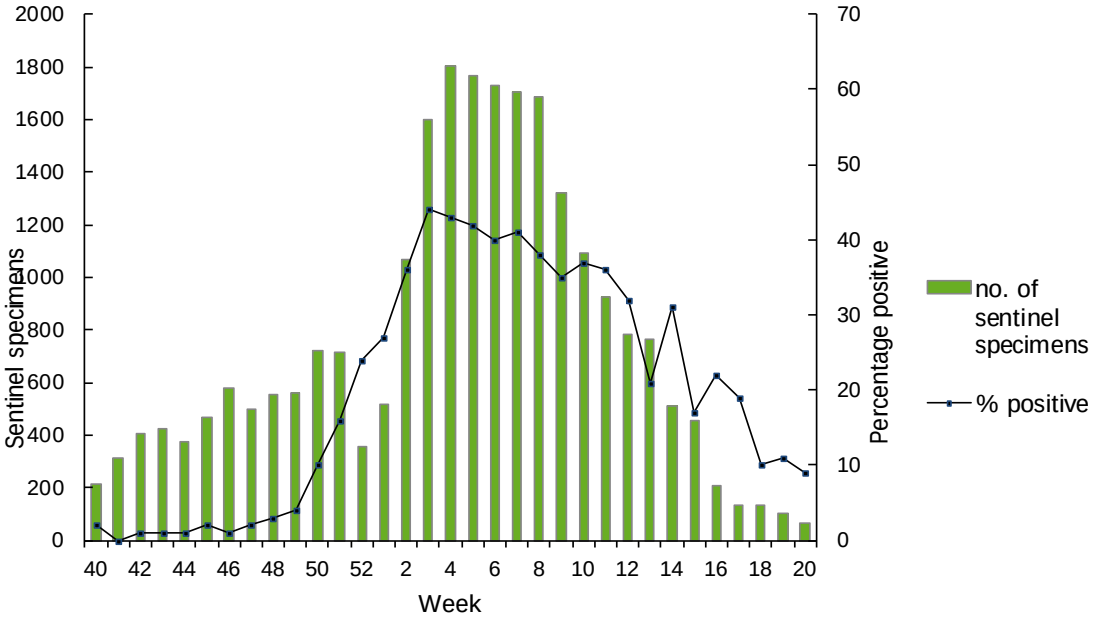


Figure 2. Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40/2013–20/2014

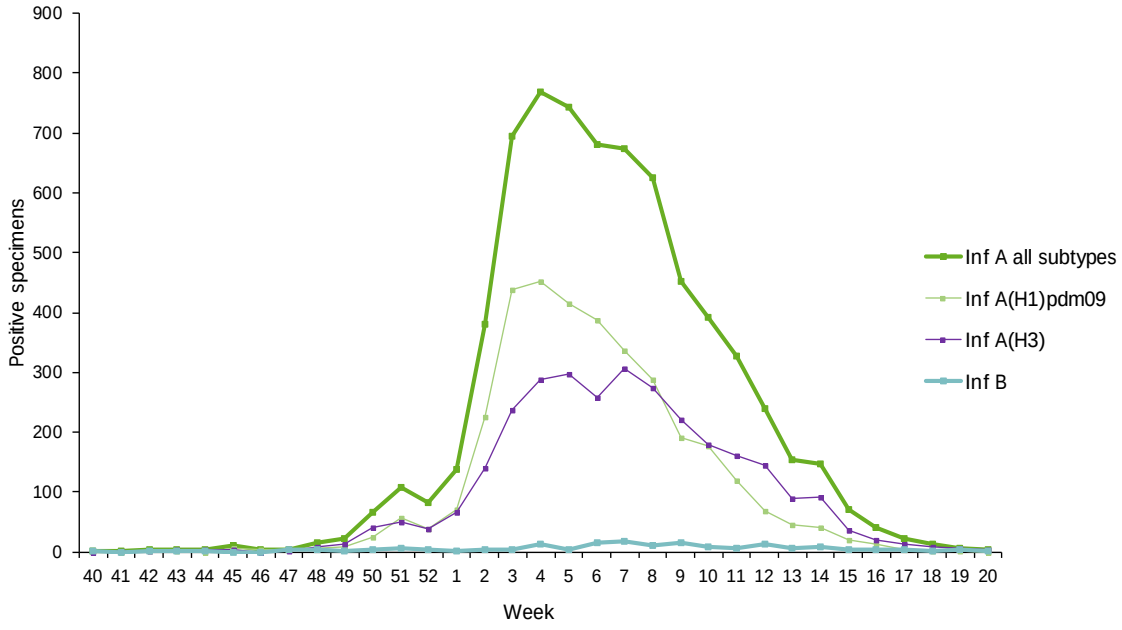


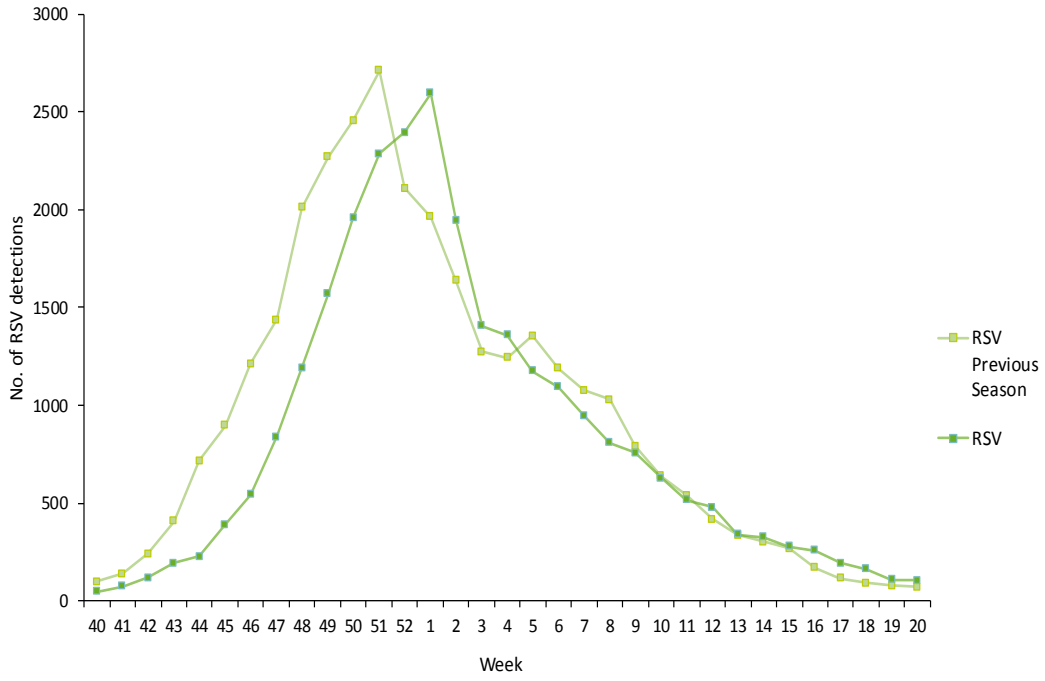
Table 3. Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2013–20/2014

Antigenic group	Number of viruses
A(H1)pdm09 A/California/7/2009 (H1N1)-like	848
A(H1)pdm09 not attributed to category	6
A(H3) A/Texas/50/2012 (H3N2)-like	547
A(H3) not attributed to category	3
B/Brisbane/60/2008-like (B/Victoria/2/87 lineage)	18
B/Massachusetts/02/2012-like (B/Yamagata/16/88-lineage)	30
B/Wisconsin/1/2010-like (B/Yamagata/16/88-lineage)	4

Table 4. Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2013–20/2014

Phylogenetic group	Number of viruses
A(H1)pdm09 clade repr. A/California/7/2009 - A/St Petersburg/27/2011 group (6)	484
A(H3) clade representative A/Perth/16/2009 – A/Texas/50/2012 subgroup(3C)	474
B(Vic)-lineage clade 1A representative B/Brisbane/60/2008	10
B(Yam)-lineage clade 2 representative B/Massachusetts/02/2012	23
B(Yam)-lineage clade 3 representative B/Wisconsin/1/2010	37

Figure 3. Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2013–20/2014



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 20/2014, no hospitalised, laboratory-confirmed influenza cases were reported (Table 5).

Since week 40/2013, eight countries have reported 4 770 hospitalised, laboratory-confirmed influenza cases: 4 711 (99%) were related to influenza virus type A infection and 59 (1%) to type B virus infection (Table 5). Of 3 229 subtyped influenza A viruses, 2 391 (74%) were A(H1)pdm09 and 838 (26%) were A(H3). A higher proportion of A(H1)pdm09 viruses has been detected in patients in ICUs (1 409 (86%) of 1 647 subtyped) than in patients in regular wards (982 (62%) of 1 582 subtyped).

Of the 3 849 hospitalised cases with reported age, 1 431 (37%) were 40–64 years and 1 427 (37%) were over 64 years, and these proportions are similar to what has been seen throughout the season. Most affected by the A(H1N1)pdm09 subtype were the age groups 20–39 years (61% of cases) and 40–64 years (60% of cases).

Five countries reported a total of 421 fatal cases (Table 6): 416 (99%) were associated with influenza virus type A infection and five (1%) with type B infection. Of 302 influenza A viruses subtyped from fatal cases, 247 (82%) were A(H1N1)pdm09 and 55 (18%) were A(H3N2). Patient age was reported for 417 of the fatal cases: 221 (53%) were 65 years or older.

Table 5. Number of hospitalised, laboratory-confirmed influenza cases by influenza type and subtype, week 20/2014; 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	0	2516	0	2195
A(H1)pdm09	0	1409	0	982
A(H3)	0	238	0	600
A(sub-typing not performed)	0	869	0	613
Influenza B	0	34	0	25
Total	**0**	**2550**	**0**	**2220**

Table 6. Cumulative number of hospitalised laboratory-confirmed influenza cases, weeks 40/2013–20/2014

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	30	-*	-	-
France	632	87	-	-
Ireland	80	15	593	4
Romania	31	12	33	1
Slovakia	-	-	4	-
Spain	817	180	1 590	105
Sweden	62	17	-	-
UK	898	-	-	-
Total	**2 550**	**311**	**2 220**	**110**

** 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 20/2014, 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.