SURVEILLANCE REPORT

Weekly influenza surveillance overview

16 May 2014

Main surveillance developments in week 19/2014 (*5–11 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 19/2014:

- Low-intensity influenza activity was reported by 26 reporting countries.
- Of 86 sentinel specimens tested across 13 countries, seven (8%) were positive for influenza virus.
- Ten hospitalised, laboratory-confirmed influenza cases were reported, seven of which were admitted to intensive care units.

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.

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 7 045 sentinel specimens testing positive for influenza virus, 6 872 (98%) were type A and 173 (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 402 fatal cases, 398 (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)

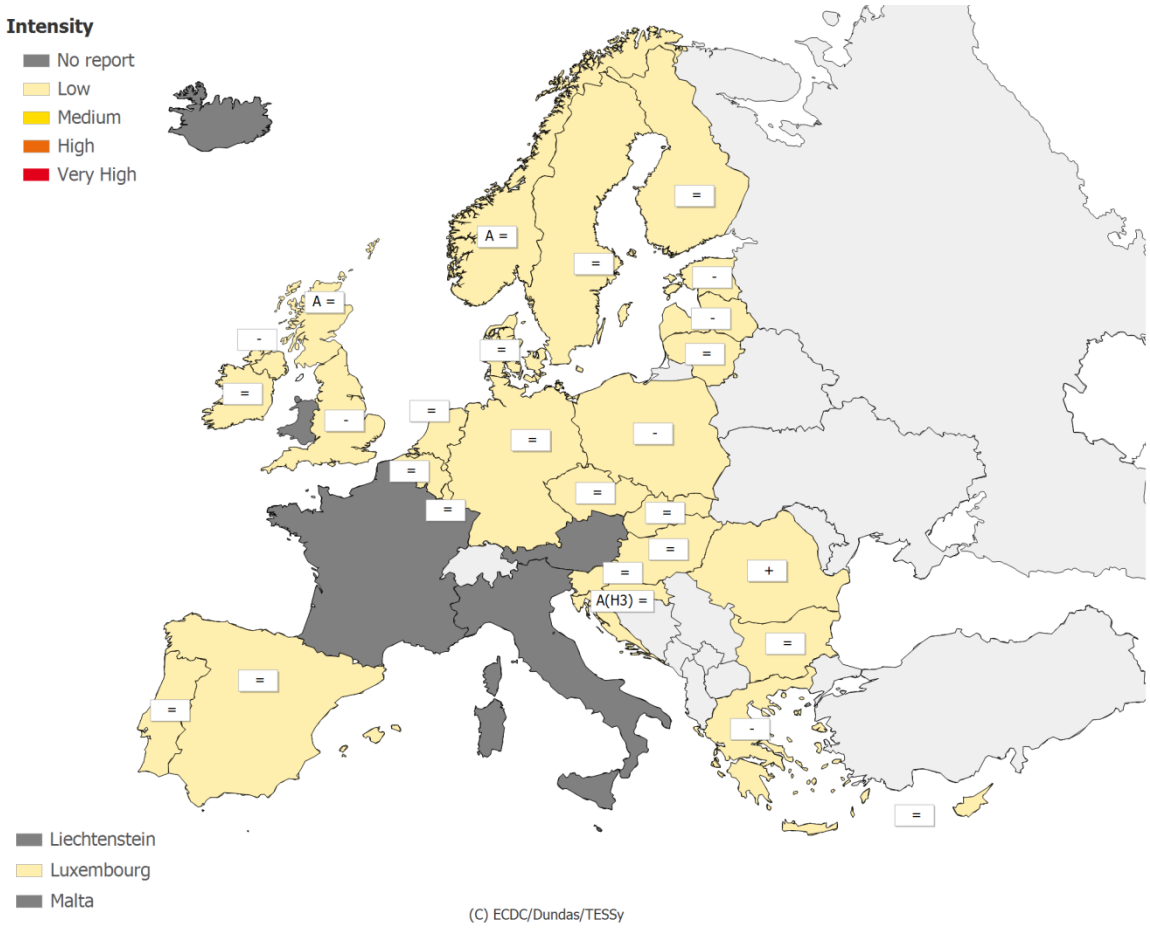
Weekly and seasonal analysis

For week 19/2014, clinical data were reported by 26 countries and all reported low intensity of influenza activity (Table 1, Map 1).

Geographic patterns of influenza activity were reported as local by Finland and the UK (England) and sporadic by eight countries. The other sixteen countries reported no activity (Table 1, Map 2).

Stable or decreasing trends were reported by 25 countries. Only Romania reported an increasing trend (Table 1, Map 2).

Map 1. Intensity for week 19/2014

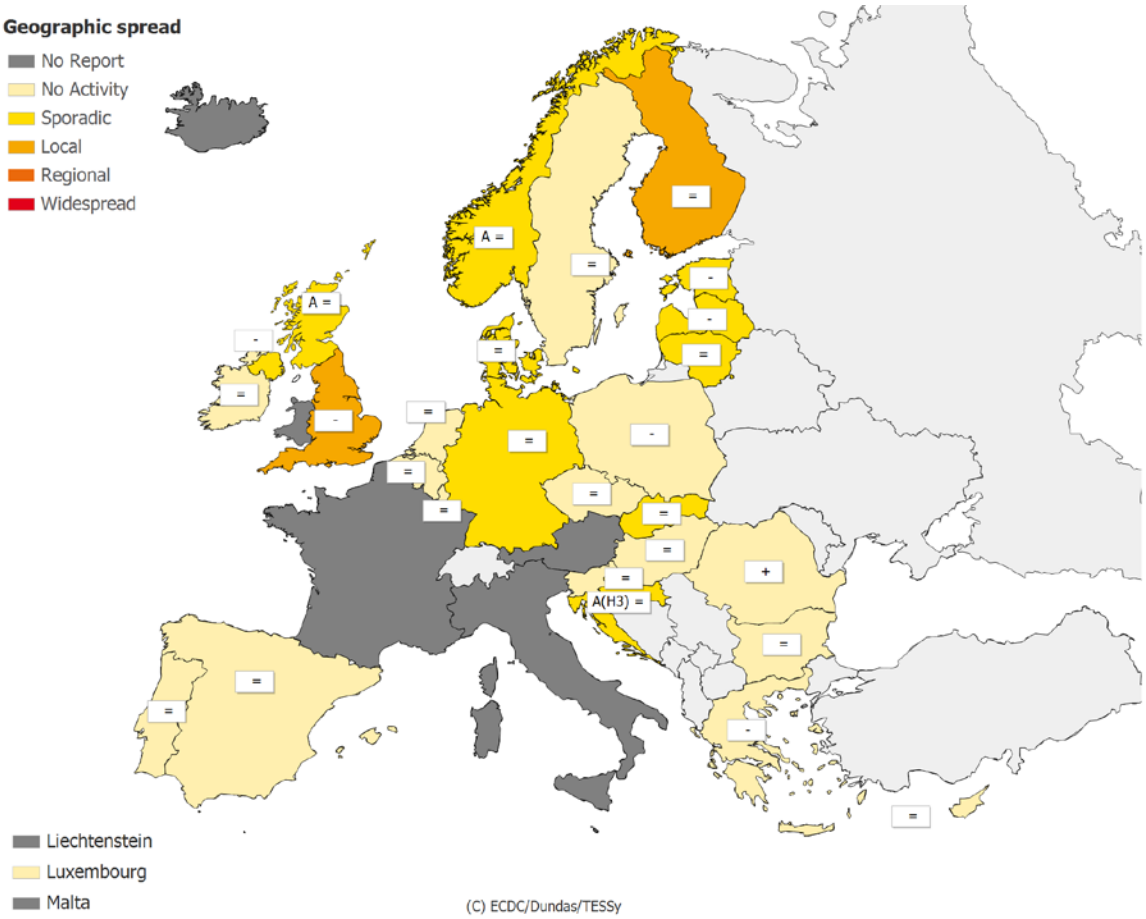


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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(H3)**	Type A, Subtype H3

Map 2. Geographic spread for week 19/2014



* 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(H3)	Type A, Subtype H3

Table 1. Epidemiological and virological overview by country, week 19/2014

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				-	-	0.0	-	-		
Belgium	Low	No activity	Stable	5	None	0.0	4.5	1243.6	Graphs	Graphs
Bulgaria	Low	No activity	Stable	0	-	0.0	-	354.7	Graphs	Graphs
Croatia	Low	Sporadic	Stable	21	A(H3)	0.0	-	-	Graphs	Graphs
Cyprus	Low	No activity	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic	Low	No activity	Stable	-	-	0.0	10.7	539.1	Graphs	Graphs
Denmark	Low	Sporadic	Stable	1	None	0.0	13.4	-	Graphs	Graphs
Estonia	Low	Sporadic	Decreasing	1	None	0.0	8.8	196.4	Graphs	Graphs
Finland	Low	Local	Stable	3	None	0.0	-	-	Graphs	Graphs
France				-	-	0.0	-	-		
Germany	Low	Sporadic	Stable	24	None	12.5	-	720.2	Graphs	Graphs
Greece	Low	No activity	Decreasing	2	None	0.0	49.6	-	Graphs	Graphs
Hungary	Low	No activity	Stable	-	None	0.0	16.4	-	Graphs	Graphs
Iceland				-	-	0.0	-	-		
Ireland	Low	No activity	Stable	0	None	0.0	0.0	-	Graphs	Graphs
Italy				-	-	0.0	-	-		
Latvia	Low	Sporadic	Decreasing	0	None	0.0	0.0	610.9	Graphs	Graphs
Lithuania	Low	Sporadic	Stable	3	-	100.0	0.7	415.9	Graphs	Graphs
Luxembourg	Low	No activity	Stable	2	-	0.0	-*	-*	Graphs	Graphs
Malta	Low	No activity	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Netherlands	Low	No activity	Stable	3	None	0.0	26.9	-	Graphs	Graphs
Norway	Low	Sporadic	Stable	0	A	0.0	22.2	-	Graphs	Graphs
Poland	Low	No activity	Decreasing	0	None	0.0	198.6	-	Graphs	Graphs
Portugal	Low	No activity	Stable	0	None	0.0	0.0	-	Graphs	Graphs
Romania	Low	No activity	Increasing	0	None	0.0	0.8	491.3	Graphs	Graphs
Slovakia	Low	Sporadic	Stable	0	None	0.0	74.9	1068.1	Graphs	Graphs
Slovenia	Low	No activity	Stable	2	None	0.0	0.0	702.7	Graphs	Graphs
Spain	Low	No activity	Stable	8	None	12.5	3.4	-	Graphs	Graphs
Sweden	Low	No activity	Stable	0	None	0.0	1.4	-	Graphs	Graphs
UK - England	Low	Local	Decreasing	7	None	0.0	2.5	-	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Decreasing	-	-	0.0	6.9	234.9	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	4	A	0.0	3.4	313.8	Graphs	Graphs
UK - Wales				-	-	0.0	-	-		
Europe				**86**		**8.1**				**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 19/2014, of 86 sentinel specimens tested across 13 countries, seven (8%) were positive for influenza virus (Tables 1–2, Figures 1–2). Of these, five were subtype A(H3) and two were type B viruses (Table 2).

Since week 40/2013, of 7 045 sentinel specimens testing positive for influenza virus, 6 872 (98%) were type A and 173 (2%) were type B. Of the 6 371 subtyped influenza A viruses, 3 405 (53%) were A(H1)pdm09 and 2 966 (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 1 423 viruses characterised antigenically since week 40/2013 have differed significantly from the current vaccine viruses recommended by WHO, but 10 were reported as being unattributable to a category (Table 3). More details on viruses circulating since September 2013 can be found in the March 2014 virus characterisation report.

Since week 40/2013, 1 178 A(H1N1)pdm09 viruses, 401 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 19/2014, seven countries reported 69 respiratory syncytial virus (RSV) detections, a level usually seen outside the RSV epidemic period.

Table 2. Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2013–19/2014

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	5	176	6872	26542
A(H1)pdm09	0	13	3405	11116
A(H3)	5	5	2966	4520
A(subtype unknown)	0	158	501	10906
Influenza B	2	41	173	1201
B(Vic) lineage	0	0	11	7
B(Yam) lineage	1	0	59	151
Unknown lineage	1	41	103	1043
Total influenza	**7**	**217**	**7045**	**27743**

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 40/2013–19/2014

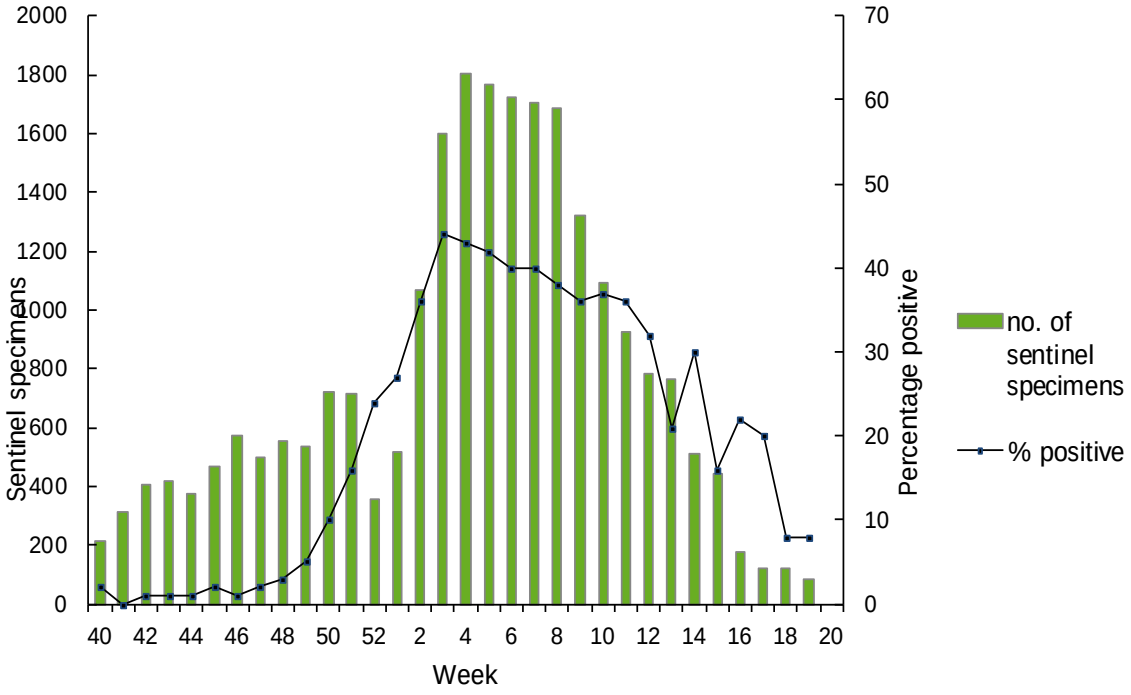


Figure 2. Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40/2013–19/2014

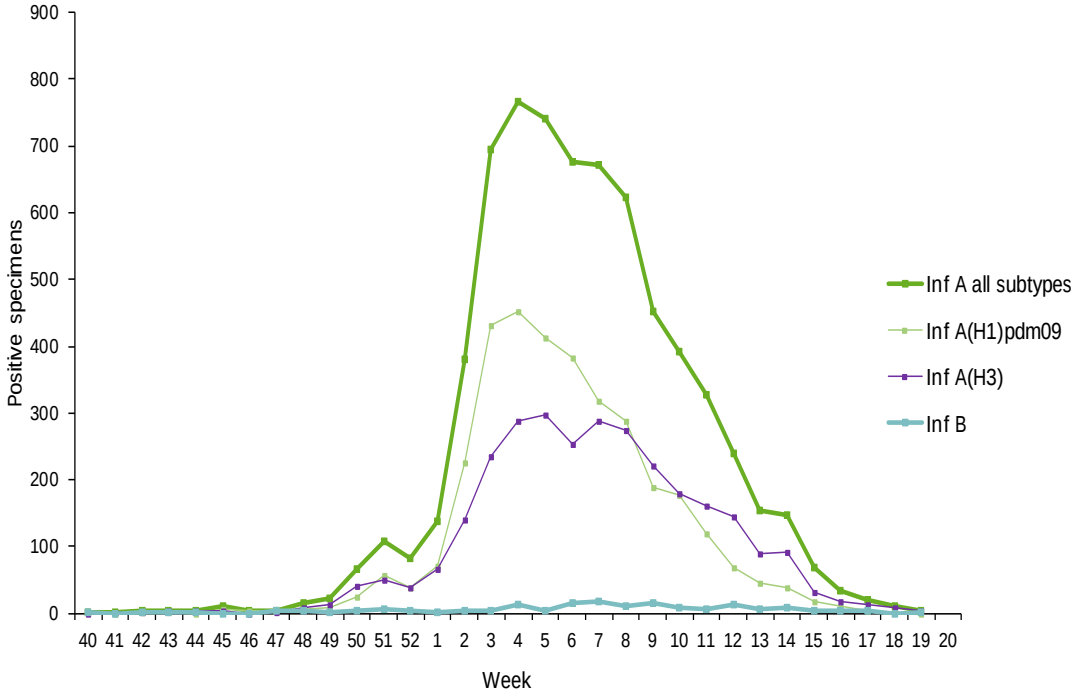


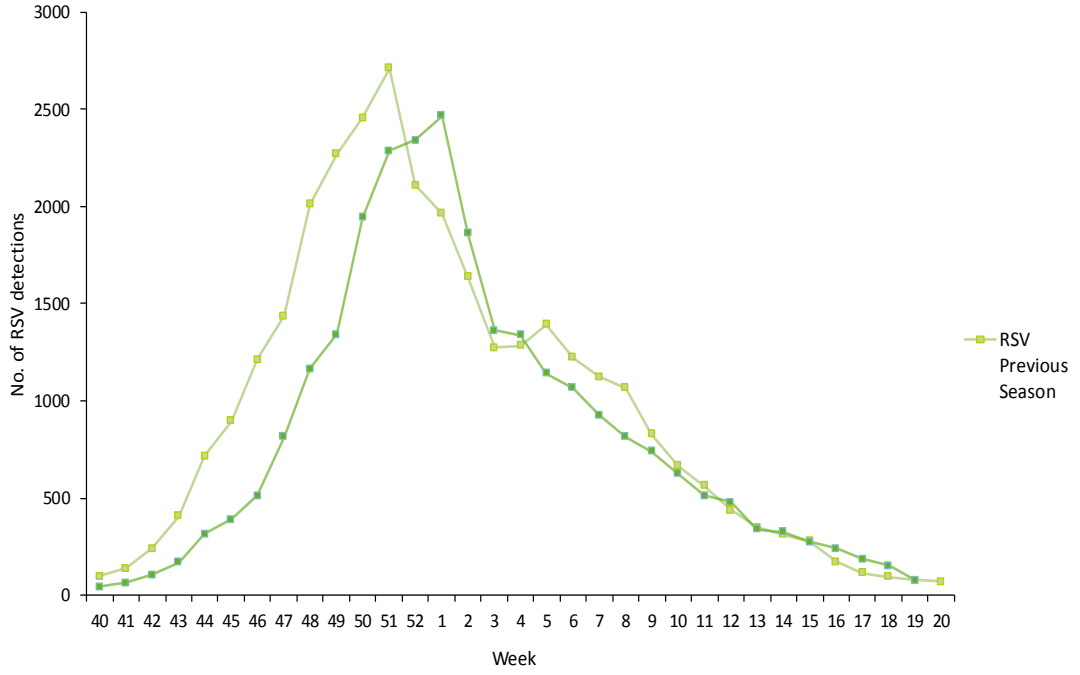
Table 3. Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2013–19/2014

Antigenic group	Number of viruses
A(H1)pdm09 A/California/7/2009 (H1N1)-like	834
A(H1)pdm09 not attributed to category	6
A(H3) A/Texas/50/2012 (H3N2)-like	533
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)	25
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 40/2013–19/2014

Phylogenetic group	Number of viruses
A(H1)pdm09 clade repr. A/California/7/2009 - A/St Petersburg/27/2011 group (6)	465
A(H3) clade representative A/Perth/16/2009 – A/Texas/50/2012 subgroup(3C)	449
B(Vic)-lineage clade 1A representative B/Brisbane/60/2008	8
B(Yam)-lineage clade 2 representative B/Massachusetts/02/2012	18
B(Yam)-lineage clade 3 representative B/Wisconsin/1/2010	31

Figure 3. Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2013–19/2014



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 19/2014, ten hospitalised, laboratory-confirmed influenza cases were reported by two countries (Ireland, and the UK). Nine of the ten patients were infected by influenza A viruses and one by B virus. Seven patients were admitted to intensive care units (ICU) (Table 5).

Since week 40/2013, eight countries have reported 4 755 hospitalised, laboratory-confirmed influenza cases: 4 696 (99%) were related to influenza virus type A infection and 59 (1%) to type B virus infection (Table 5). Of 3 220 subtyped influenza A viruses, 2 385 (74%) were A(H1)pdm09 and 835 (26%) were A(H3). A higher proportion of A(H1N1)pdm09 viruses has been detected in patients in ICUs (1 403 (86%) of 1 640 subtyped) than in patients in regular wards (982 (62%) of 1 580 subtyped).

Of the 3 840 hospitalised cases with reported age, 1 428 (37%) were 40–64 years and 1 421 (37%) were over 64 years, proportions that have been seen throughout the season. Most affected by the A(H1N1)pdm09 subtype were the age groups 20–39 years (61%) and 40–64 years (60%).

Five countries reported a total of 402 fatal cases (Table 6): 398 (99%) were associated with influenza virus type A infection and four (1%) with type B infection. Of 290 influenza A viruses subtyped from fatal cases, 235 (81%) were A(H1N1)pdm09 and 55 (19%) were A(H3N2). Patient age was reported for 398 of the fatal cases: 212 (53%) were 65 years or older.

Table 5. Number of hospitalised, laboratory-confirmed influenza cases by influenza type and subtype, week 19/2014; 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	7	2 505	2	2 191
A(H1)pdm09	5	1 403	0	982
A(H3)	0	237	0	598
A(subtyping not performed)	2	865	2	611
Influenza B	0	34	1	25
Total	**7**	**2 539**	**3**	**2 216**

Table 6. Cumulative number of hospitalised laboratory-confirmed influenza cases, weeks 40/2013–19/2014

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	14	591	3
Romania	31	12	33	1
Slovakia	-	-	4	-
Spain	812	176	1 588	104
Sweden	62	5	-	-
UK	892	-	-	-
Total	**2 539**	**294**	**2 216**	**108**

** 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 19/2014, 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.