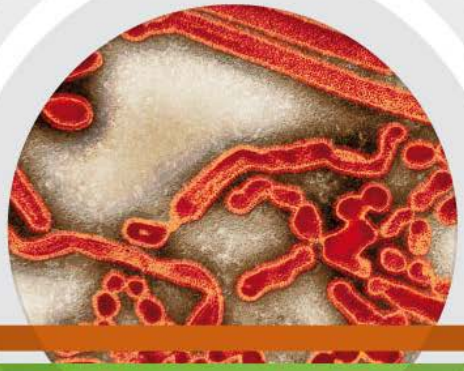


SURVEILLANCE REPORT

Weekly influenza surveillance overview

31 January 2014

Main surveillance developments in week 4/2013 (20–26 January 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 4/2014:

- Influenza activity continued to increase in most reporting countries throughout the EU/EEA region. ILI rates were similar or higher than those for 2013 in Bulgaria, Greece, Portugal and Spain.
- Proportions of sentinel A(H1)pdm09 and A(H3) viruses varied substantially between countries. Very few influenza B viruses were detected.
- In five reporting countries, 87% of hospitalised laboratory-confirmed influenza cases were related to infection with A(H1)pdm09 virus.

Influenza activity has continued to increase in almost all EU/EEA countries, with varying proportions of A(H1)pdm09 and A(H3) among countries.

Sentinel surveillance of influenza-like illness (ILI) / acute respiratory infection (ARI): Influenza activity continued to increase in most reporting countries. For more information, **click here**.

Virological surveillance: The proportions of circulating A(H1)pdm09 and A(H3) viruses varied between EU/EEA countries. For more information, **click here**.

Hospital surveillance of laboratory-confirmed influenza cases. The vast majority of hospitalised laboratory-confirmed influenza cases were related to A(H1)pdm09 infection. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

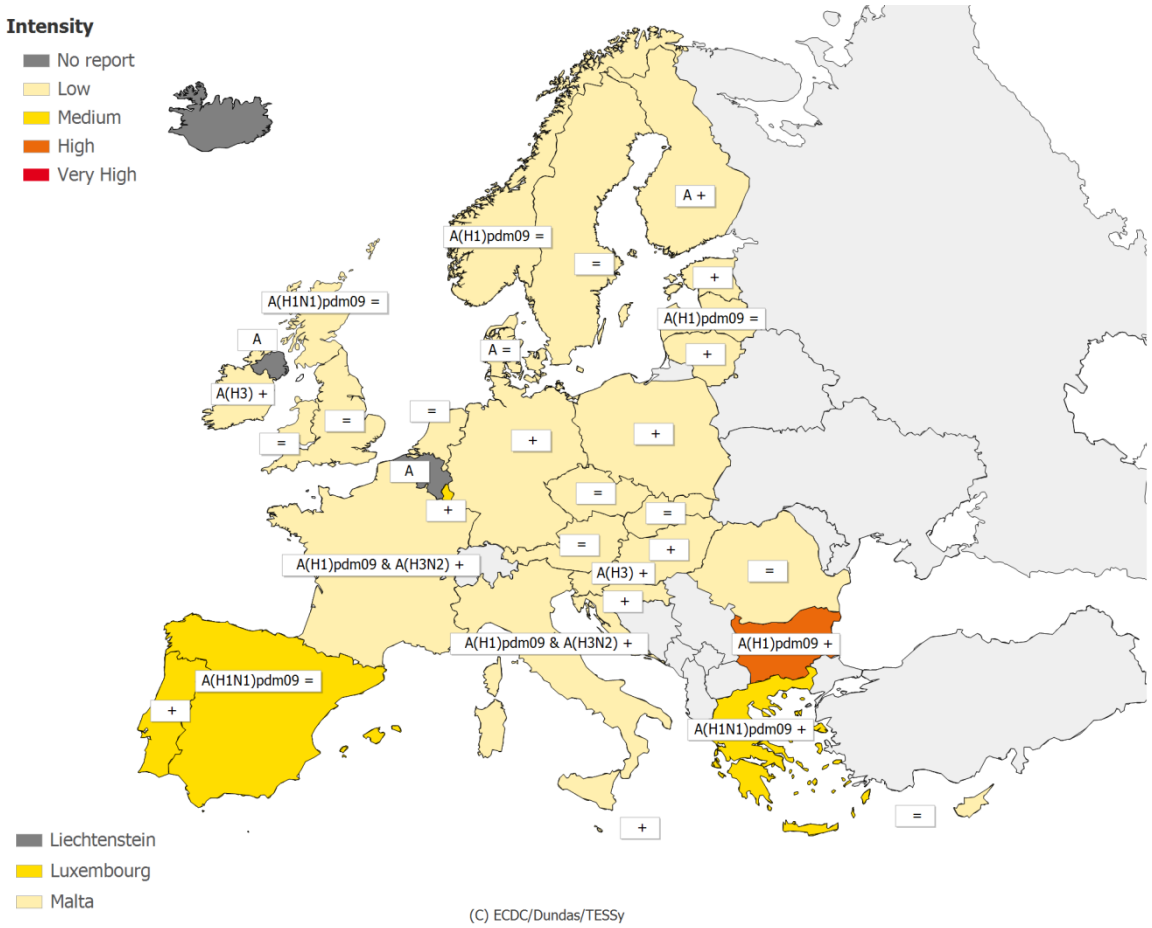
For week 4/2014**,** clinical data were reported by 28 countries. Bulgaria reported high intensity and Greece, Luxembourg, Portugal and Spain reported medium intensity, while all other countries experienced low-intensity influenza, which is the lowest category of reporting (Table 1, Map1).

Geographic patterns of influenza activity were reported as widespread by Bulgaria, Greece, Luxembourg and Spain, regional or local by eight countries and sporadic by 12 countries. No geographic spread was reported by Cyprus, Slovakia and the UK (Wales) (Table 1, Map 2).

Increasing trends were reported by 16 countries while stable trends were reported by 12 countries.

Influenza activity continued to increase in the EU/EEA, with more countries reporting increasing trends and greater geographic spread. In week 4/2014, ILI rates reached (Portugal) or exceeded (Bulgaria, Greece and Spain) peak rates reported in 2013.

Map 1. Intensity for week 04/2014



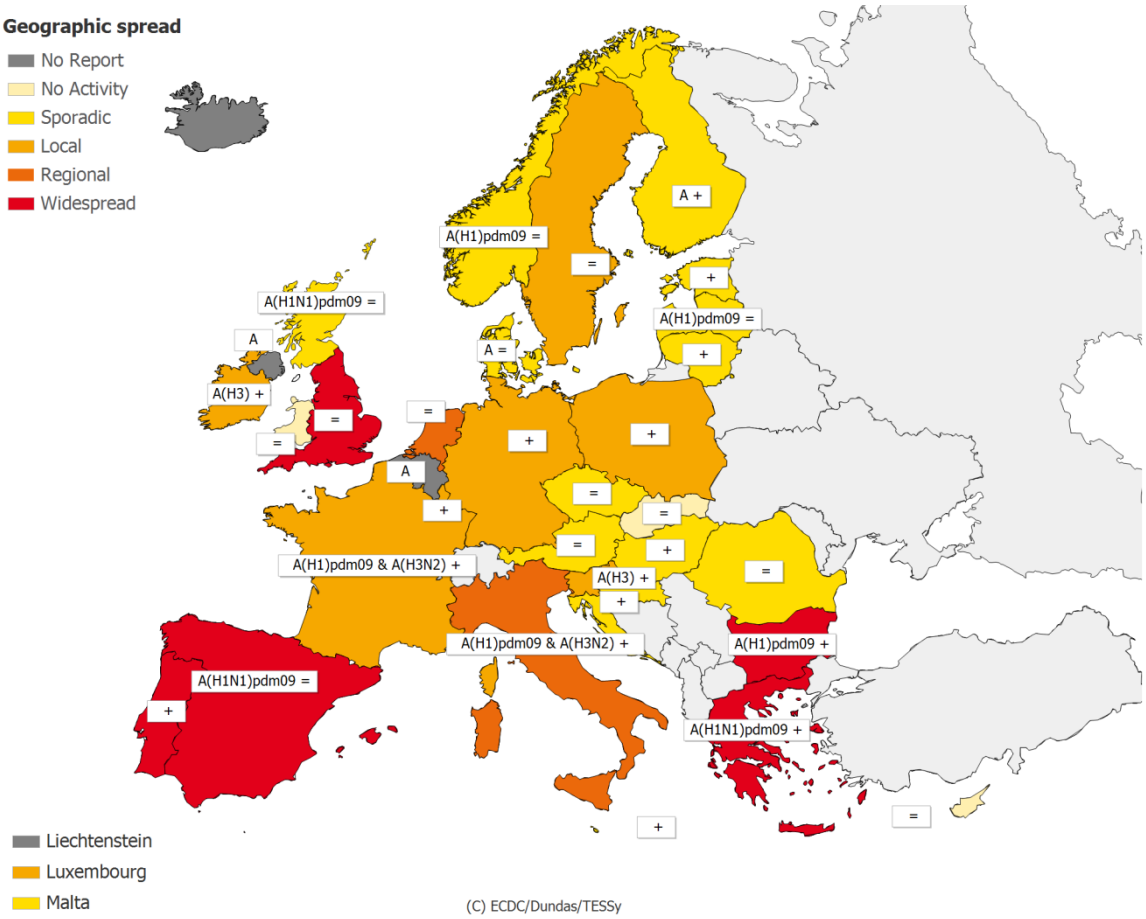
(C) ECDC/Dundas/TESSy

* 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(H1)pdm09 & A(H3N2)	Type A, Subtype (H1)pdm09 and H3N2
		A (H1N1)pdm09	Type A, Subtype (H1N1)pdm09
		A(H3)	Type A, Subtype H3

Map 2. Geographic spread for week 04/2014



* 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(H1)pdm09 & A(H3N2)	Type A, Subtype (H1)pdm09 and H3N2
A (H1N1)pdm09	Type A, Subtype (H1N1)pdm09
A(H3)	Type A, Subtype H3

Table 1. Epidemiological and virological overview by country, week 4/2014

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	Low	Sporadic	Stable	23	None	26.1	917.0	-	Graphs	Graphs
Belgium				20	A	25.0	-	-	Graphs	Graphs
Bulgaria	High	Widespread	Increasing	53	A(H1)pdm09	34.0	-	2356.4	Graphs	Graphs
Croatia	Low	Sporadic	Increasing	91	None	0.0	-	-	Graphs	Graphs
Cyprus	Low	No activity	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic	Low	Sporadic	Stable	-	-	0.0	27.6	888.0	Graphs	Graphs
Denmark	Low	Sporadic	Stable	4	A	0.0	50.8	-	Graphs	Graphs
Estonia	Low	Sporadic	Increasing	10	None	10.0	6.2	255.6	Graphs	Graphs
Finland	Low	Sporadic	Increasing	21	A	14.3	-	-	Graphs	Graphs
France	Low	Local	Increasing	169	A(H1)pdm09 & A(H3N2)	37.9	-	1925.4	Graphs	Graphs
Germany	Low	Local	Increasing	103	None	7.8	-	1096.4	Graphs	Graphs
Greece	Medium	Widespread	Increasing	18	A(H1)pdm09	44.4	215.4	-	Graphs	Graphs
Hungary	Low	Sporadic	Increasing	35	None	17.1	128.4	-	Graphs	Graphs
Iceland				0	-	0.0	-	-	Graphs	Graphs
Ireland	Low	Local	Increasing	15	A(H3)	60.0	17.7	-	Graphs	Graphs
Italy	Low	Regional	Increasing	84	A(H1)pdm09 & A(H3N2)	34.5	521.7	-	Graphs	Graphs
Latvia	Low	Sporadic	Stable	0	A(H1)pdm09	0.0	1.8	960.8	Graphs	Graphs
Lithuania	Low	Sporadic	Increasing	3	None	0.0	1.9	640.6	Graphs	Graphs
Luxembourg	Medium	Local	Increasing	22	-	45.5	-*	-*	Graphs	Graphs
Malta	Low	Sporadic	Increasing	0	None	0.0	-*	-*	Graphs	Graphs
Netherlands	Low	Regional	Stable	13	None	0.0	40.7	-	Graphs	Graphs
Norway	Low	Sporadic	Stable	16	A(H1)pdm09	18.8	36.4	-	Graphs	Graphs
Poland	Low	Local	Increasing	6	None	0.0	362.6	-	Graphs	Graphs
Portugal	Medium	Widespread	Increasing	-	-	0.0	69.1	-	Graphs	Graphs
Romania	Low	Sporadic	Stable	3	-	33.3	1.9	706.1	Graphs	Graphs
Slovakia	Low	No activity	Stable	1	None	0.0	165.9	1537.6	Graphs	Graphs
Slovenia	Low	Local	Increasing	38	A(H3)	34.2	11.5	1418.7	Graphs	Graphs
Spain	Medium	Widespread	Stable	660	A(H1)pdm09	38.3	292.2	-	Graphs	Graphs
Sweden	Low	Local	Stable	41	-	17.1	5.6	-	Graphs	Graphs
UK - England	Low	Widespread	Stable	-	-	0.0	7.2	217.0	Graphs	Graphs
UK - Northern Ireland				8	A	37.5	-	-	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	34	A(H1)pdm09	8.8	8.4	392.2	Graphs	Graphs
UK - Wales	Low	No activity	Stable	4	None	0.0	5.7	-	Graphs	Graphs
Europe				**1495**		**30.1**				**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 analysis – virology

For week 4/2014, 24 countries tested a total of 1 495 sentinel specimens, of which 450 (30%) were positive for influenza virus, a slight decrease against the previous week, possibly due to reporting delays (Tables 1–2, Figures 1–2). Influenza A(H1)pdm09 virus was reported as dominant by Bulgaria, Greece, Latvia, Norway, Spain and the UK (Scotland) while A(H3) was reported as dominant in Ireland and Slovenia. Both virus subtypes circulated evenly in France and Italy. For week 4/2014, of 450 sentinel influenza viruses detected, 444 (99%) were type A and six (1%) were type B. Of the 329 influenza A viruses subtyped, 181 (55%) were A(H1)pdm09 and 148 (45%) were A(H3) (Tables 1-2, Figures 1-2). Non-sentinel influenza virus detections are summarised in Table 2.

The results of antigenic and genetic characterisations of sentinel and non-sentinel viruses are displayed in Tables 3 and 4. Since week 40/2013, none of the 137 antigenically characterised viruses have differed substantially from the current vaccine viruses recommended by WHO (Table 3). More details on viruses circulating since September 2013 can be found in the December virus characterisation report.

Since week 40/2013, 203 A(H1)pdm09 viruses, 64 A(H3N2) and 21 influenza B viruses have been tested for susceptibility to neuraminidase inhibitors (NAIs) by genetic and/or phenotypic methods, and reported on by the Netherlands, Norway, Portugal, Spain, Sweden, and the United Kingdom. Two A(H1)pdm09 viruses carried the NA-H275Y amino acid substitution associated with highly reduced inhibition by oseltamivir. One A(H3N2) virus carrying the NA-E119V amino acid substitution showed reduced inhibition by oseltamivir on phenotypic testing and normal inhibition by zanamivir. Despite treatment with oseltamivir, the patient died. None of the test results of the other viruses showed evidence for reduced or highly reduced inhibition by NAIs.

For week 4/2014, 14 countries reported 866 RSV detections, a substantial decrease since the peak observed in week 1/2014 (Figure 3).

Table 2. Week 4/2014 and cumulative (since week 40/2013) influenza virus detections by type, subtype and surveillance system

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	444	762	1910	3914
A(H1)pdm09	181	384	958	1820
A(H3)	148	87	721	604
A(sub-type unknown)	115	291	231	1490
Influenza B	6	24	42	234
B(Vic) lineage	0	0	1	3
B(Yam) lineage	2	2	10	39
Unknown lineage	4	22	31	192
Total influenza	**450**	**786**	**1952**	**4148**

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 40-2013-4/2014

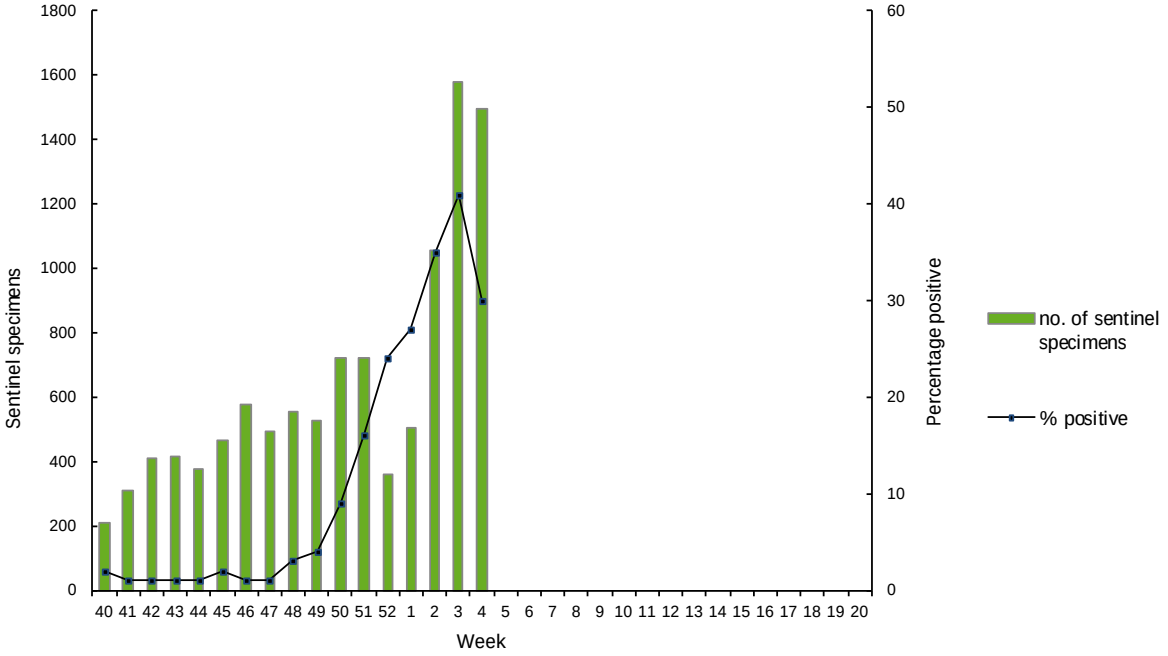


Figure 2. Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40/2013-4/2014

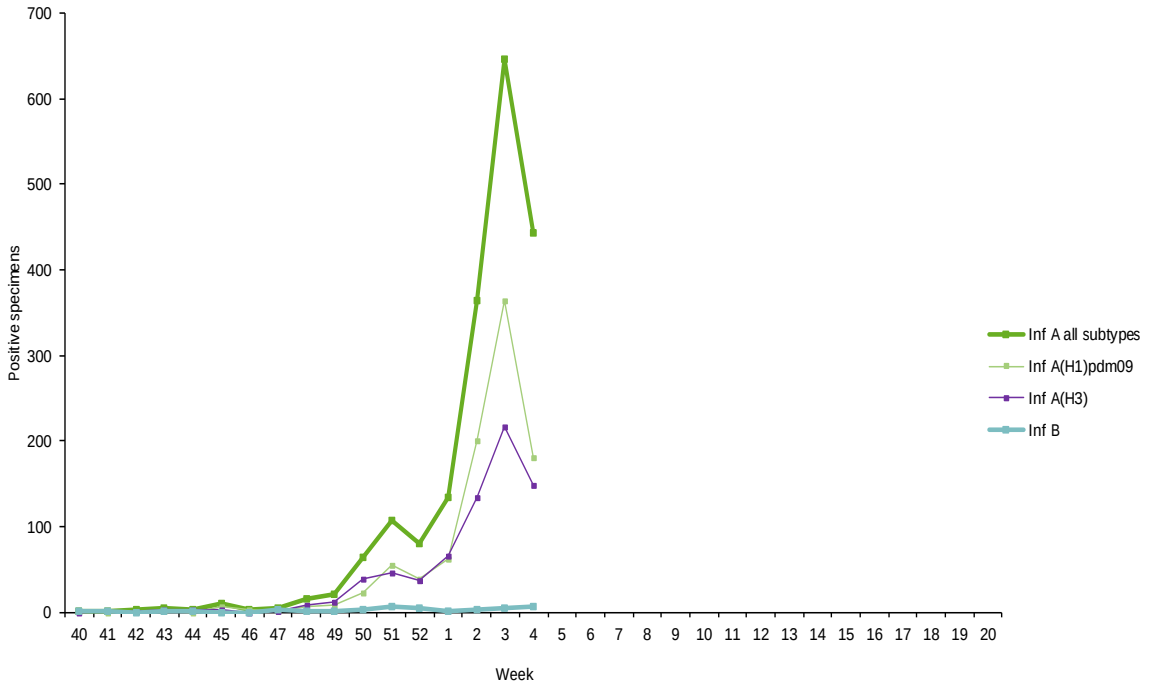


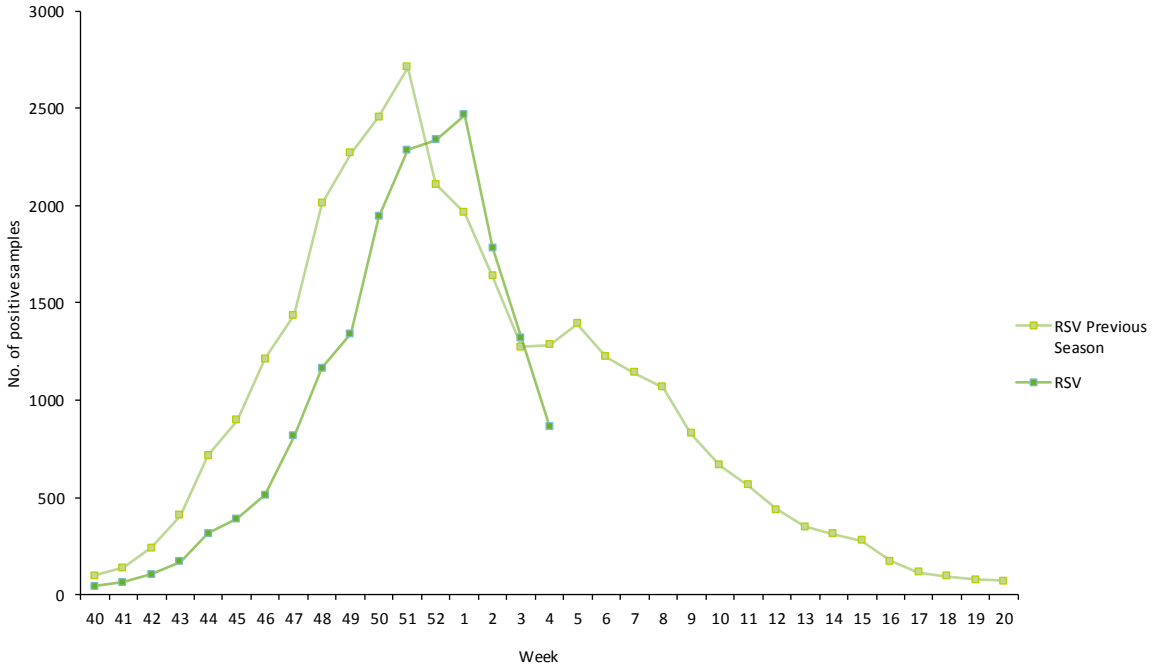
Table 3. Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2013-4/2014

Antigenic group	Number of viruses
A(H1)pdm09 A/California/7/2009 (H1N1)-like	66
A(H3) A/Texas/50/2012 (H3N2)-like	65
B/Brisbane/60/2008-like (B/Victoria/2/87 lineage)	2
B/Massachusetts/02/2012-like (B/Yamagata/16/88-lineage)	3
B/Wisconsin/1/2010-like (B/Yamagata/16/88-lineage)	1

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

Phylogenetic group	Number of viruses
A(H1)pdm09 clade repr. A/California/7/2009 - A/St Petersburg/27/2011 group (6)	120
A(H3) clade representative A/Perth/16/2009 – A/Texas/50/2012 subgroup(3C)	83
B(Vic)-lineage clade 1A representative B/Brisbane/60/2008	1
B(Yam)-lineage clade 2 representative B/Massachusetts/02/2012	10
B(Yam)-lineage clade 3 representative B/Wisconsin/1/2010	10

Figure 3. Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2013-4/2014



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 4/2014, 217 hospitalised, laboratory-confirmed influenza cases were reported by five countries (France, Ireland, Spain, Sweden and the UK) (Table 5). Of these, 105 (48%) were related to A(H1)pdm09, 16 (7 %) to A(H3), 95 (44%) to non-subtyped influenza A viruses and one to an influenza B virus.

Since week 40/2013, six countries have reported 1 177 hospitalised laboratory-confirmed influenza cases: 1 160 (99%) were related to influenza type A and 17 (1%) to type B (Tables 5 and 6). Of 785 subtyped influenza A viruses, 633 (81%) were A(H1)pdm09 and 152 (19%) were A(H3) viruses (Table 5). In patients with known vaccination status, 77% were unvaccinated.

In addition, 387 (38%) of 1 016 hospitalised cases with reported age were in the age group 40-64 years and 334 (33%) were 65 years and older. Of 563 patients with known age and infected by A(H1)pdm09, 243 (43%) were middle-aged adults (40-64 years).

Since week 40/2013, France, Spain and Ireland have reported 71 fatal cases (Table 6). All fatal cases were associated with influenza type A infection and 50 were subtyped: 39 (78%) as A(H1)pdm09 and 11 (22%) as A(H3).

Table 5. Number of hospitalised laboratory-confirmed influenza cases by influenza type and subtype, week 4/2014 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	216	1160
A(H1)pdm09	105	633
A(H3)	16	152
A(sub-typing not performed)	95	375
Influenza B	1	17
Total	**217**	**1177**

Table 6. Cumulative (since week 40/2013) number of hospitalised laboratory-confirmed influenza cases

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	84		7		
Ireland	40		1		
Romania	3	0.05			5813728
Spain	877		63		
Sweden	15				
United Kingdom	158	0.25			63705030
Total	**1177**		**71**		

The EuroMOMO mortality monitoring system

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, Julien Beauté 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 (Inštitut za varovanje zdravja), 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.