



SURVEILLANCE REPORT

Fortnightly influenza surveillance overview

28 September 2012

Main surveillance developments in weeks 37-38/2012 (10–23 September 2012)

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

The 2011/12 influenza season has ended, but the surveillance of influenza continues during the off-season period and the bulletin will appear on a fortnightly basis until week 40/2012 (first weekly publication will be on 12 October 2012).

- During weeks 37–38/2012, all reporting countries experienced low-intensity influenza-like illness.
- Of 68 sentinel specimens tested, none were positive for influenza virus. Since week 40/2011, 89% of sentinel influenza viruses detected have been type A and 11% type B. The A(H3) subtype constituted 98% of sentinel influenza type A viruses during the 2011/12 season.
- 23 non-sentinel specimens tested positive for influenza virus, 16 for type B and 7 for type A viruses, indicating low circulation of influenza viruses in Europe.
- Many of the A(H3) viruses reacted poorly with post-infection ferret antisera raised against the A/Perth/16/2009 H3N2 vaccine component, prompting the WHO's decision to recommend a change to the A(H3N2) component for the northern hemisphere 2012/13 influenza season. This is consistent with the low vaccine effectiveness of the A(H3N2) component, detected in observational studies during the 2011–2012 season which was dominated by A(H3N2) in Europe.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Influenza activity of low-intensity was notified by all 18 reporting countries. For more information, [click here](#).

Virological surveillance: Of 68 sentinel specimens tested, none were positive for influenza viruses. For more information, [click here](#).

Hospital surveillance of severe acute respiratory infection (SARI): During weeks 37–38/2012, no SARI cases were reported. For more information, [click here](#).

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

In weeks 37 and 38/2012, 18 countries reported clinical data. All reporting countries experienced low-intensity influenza activity, the lowest category of reporting, during both weeks (Table 1, Map 1).

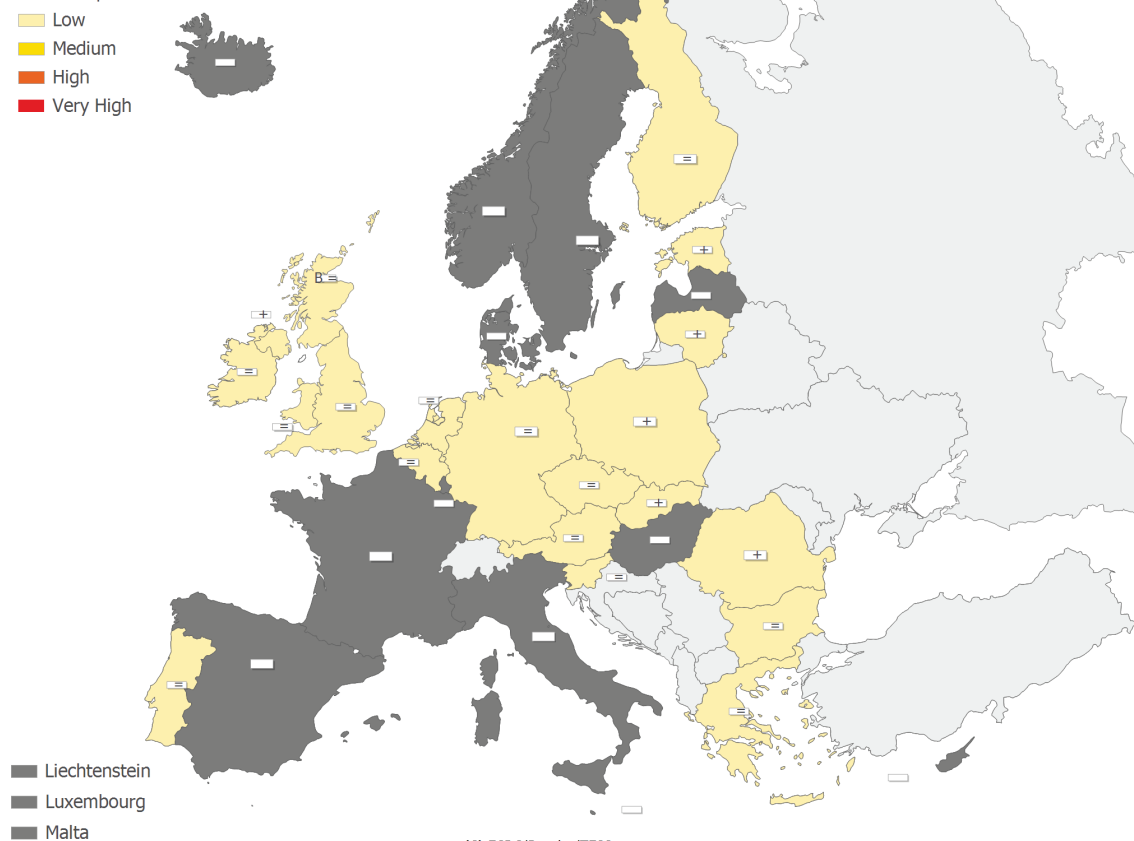
For weeks 37 and 38, all but two countries reporting on geographic spread indicated no activity. The UK(Scotland) reported sporadic activity for both weeks while Lithuania did so for week 38.

For weeks 37 and 38, stable trends were reported by most countries. However, for week 37, increasing trends were reported by Poland, Romania and Slovakia. In addition to these countries, for week 38, increasing trends were reported by Estonia, Lithuania and the UK (Northern Ireland) (Table 1).

Map 1: Intensity for weeks 37–38/2012

Intensity

- No report
- Low
- Medium
- High
- Very High



(C) ECDC/Dundas/TESSy

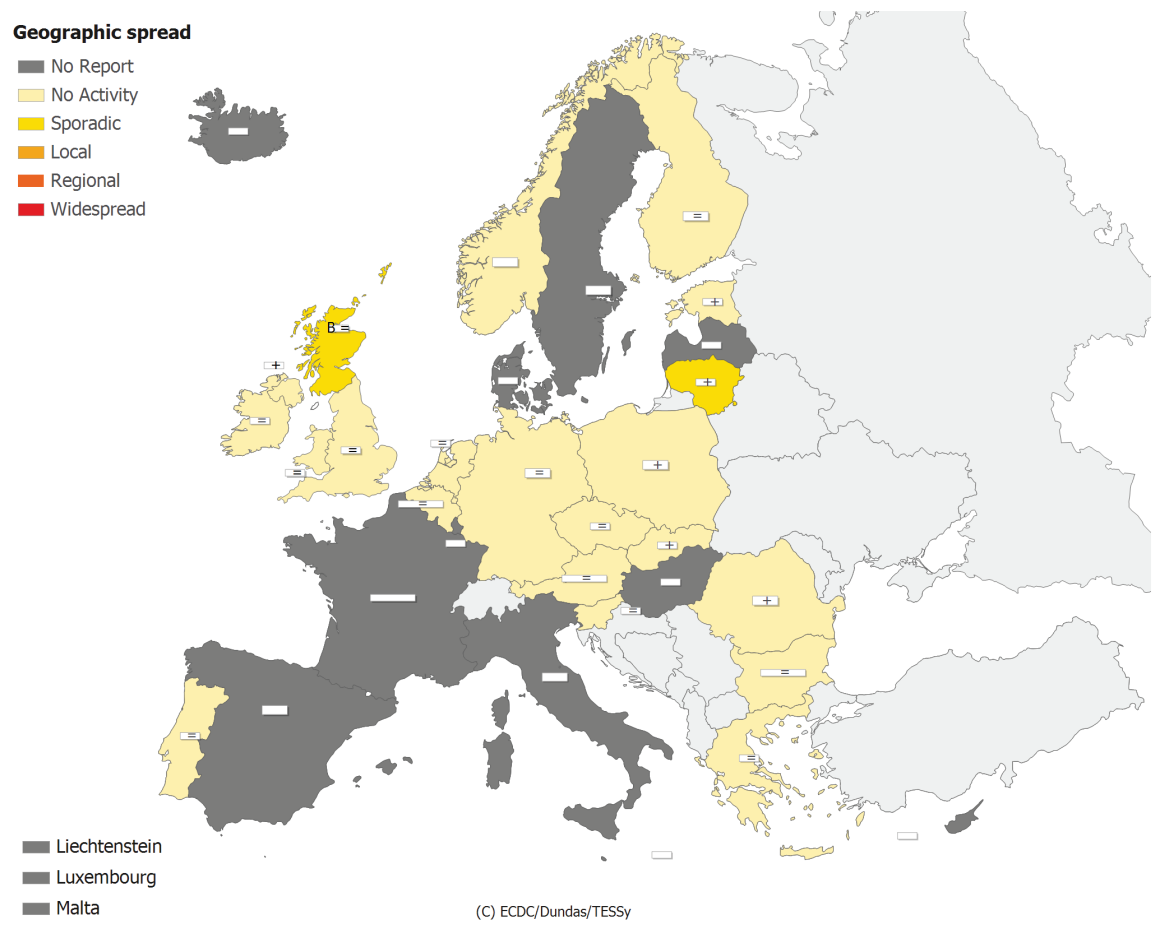
* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

Legend:

No report	Intensity level was not reported	-	Decreasing clinical activity
Low	No influenza activity or influenza at baseline levels	+	Increasing clinical activity
Medium	Usual levels of influenza activity	=	Stable clinical activity
High	Higher than usual levels of influenza activity	B	Type B
Very high	Particularly severe levels of influenza activity		

**The map only displays data for the most recent reported week of the two-week surveillance period. For information on the other week please consult the weekly 'Influenza activity maps' [here](#).*

Map 2: Geographic spread for weeks 37–38/2012



* 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	+	Increasing clinical activity
No activity	No evidence of influenza virus activity (clinical activity remains at baseline levels)	-	Decreasing clinical activity
Sporadic	Isolated cases of laboratory confirmed influenza infection	=	Stable clinical activity
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)	B	Type B
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)		

*The map only displays data for the most recent reported week of the two-week surveillance period. For information on the other week please consult the weekly 'Influenza activity maps' [here](#).

Table 1: Epidemiological and virological overview by country, weeks 37–38/2012

Country	Intensity	Geographic spread	Trend	No. of sentinel swabs	Dominant type	Percentage positive	ILI per 100 000	ARI per 100 000	Epidemiological overview	Virological overview
Austria	Low	No activity	Stable	0	None	0.0	-	-	Graphs	Graphs
Belgium	Low	No activity	Stable	-	-	0.0	42.7	1437.1	Graphs	Graphs
Bulgaria	Low	No activity	Stable	0	None	0.0	-	253.4	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	No activity	Stable	-	-	0.0	7.5	445.8	Graphs	Graphs
Denmark				0	None	0.0	-	-	Graphs	Graphs
Estonia	Low	No activity	Increasing	3	None	0.0	2.9	249.8	Graphs	Graphs
Finland	Low	No activity	Stable	35	None	0.0	-	-	Graphs	Graphs
France				-	-	0.0	-	-		
Germany	Low	No activity	Stable	7	None	0.0	-	714.7	Graphs	Graphs
Greece	Low	No activity	Stable	0	-	0.0	18.8	-	Graphs	Graphs
Hungary				-	-	0.0	-	-		
Iceland				0	-	0.0	-	-	Graphs	Graphs
Ireland	Low	No activity	Stable	3	None	0.0	3.1	-	Graphs	Graphs
Italy				-	-	0.0	-	-		
Latvia				0	None	0.0	-	-	Graphs	Graphs
Lithuania	Low	Sporadic	Increasing	0	None	0.0	0.1	460.1	Graphs	Graphs
Luxembourg				-	-	0.0	-	-		
Malta				-	-	0.0	-	-		
Netherlands	Low	No activity	Stable	7	None	0.0	15.3	-	Graphs	Graphs
Norway	Unknown (no information available)	No activity	Unknown (no information available)	0	None	0.0	-	-	Graphs	Graphs
Poland	Low	No activity	Increasing	0	None	0.0	54.5	-	Graphs	Graphs
Portugal	Low	No activity	Stable	0	None	0.0	0.0	-	Graphs	Graphs
Romania	Low	No activity	Increasing	0	None	0.0	0.0	375.9	Graphs	Graphs
Slovakia	Low	No activity	Increasing	0	None	0.0	73.4	956.2	Graphs	Graphs
Slovenia	Low	No activity	Stable	1	None	0.0	0.0	767.1	Graphs	Graphs
Spain				0	None	0.0	-	-	Graphs	Graphs
Sweden				0	-	0.0	-	-	Graphs	Graphs
UK - England	Low	No activity	Stable	12	None	0.0	2.9	230.3	Graphs	Graphs
UK - Northern Ireland	Low	No activity	Increasing	0	-	0.0	6.4	283.8	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	-	B	0.0	7.6	374.9	Graphs	Graphs
UK - Wales	Low	No activity	Stable	0	None	0.0	0.6	-	Graphs	Graphs
Europe				68		0.0				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.

For intensity, geographic spread and trend, the table only displays data for the most recently reported week of the two-week surveillance period.

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 influenza-like illness (ILI), acute respiratory infection (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

During weeks 37 and 38/2012, 21 countries reported virological data. Of 68 sentinel specimens tested, none were positive for influenza virus (Tables 1 and 2, Figure 1).

In non-sentinel specimens, during weeks 37–38/2012, twenty-three influenza viruses were detected: seven type A and 16 type B viruses (Table 2).

Of the 9 493 influenza virus detections in sentinel specimens since week 40/2011, 8 466 (89.2%) were type A and 1 027 (10.8%) were type B viruses. Of the 7 804 sentinel influenza A viruses subtyped, 7 686 (98.5%) were A(H3) and 118 (1.5%) were A(H1)pdm09 viruses (Table 2, Figure 2). Of 191 sentinel influenza B viruses analysed to determine genetic lineage, 115 (60.2%) were of the B/Victoria/2/87 lineage and 76 (39.8%) were of the B/Yamagata/16/88 lineage.

Since week 40/2011, 1 898 antigenic characterisations of viruses have been reported, of which 1 375 (72.4%) were A/Perth/16/2009 (H3N2)-like viruses (Figure 4). Seventy-eight viruses have been reported without being assigned to an antigenic group: 50 were A(H3), 19 B (Yamagata lineage) and nine B (Victoria lineage), possibly reflecting changes in antigenicity compared with the previous seasons' reference viruses.

Since week 40/2011, 1 541 genetic characterisations of influenza viruses have been reported, 1 286 (83.5%) of which were A(H3) viruses (Figure 5). Of the latter, 453 (35.2%) fell within the A/Victoria/208/2009 clade, genetic group 3 represented by A/Stockholm/18/2011. Viruses falling in the A/Victoria/208/2009 genetic clade are antigenically diverse and many display a reduced reactivity with ferret antiserum raised against the vaccine virus A/Perth/16/2009 used for the 2011/12 influenza season. This is consistent with the low vaccine effectiveness detected in observational studies this season (2011–2012) (Kissling et al.) which was dominated by A(H3N2) in Europe. More details on the antigenic and genetic characteristics of circulating viruses can be found in the [July report](#) prepared by the Community Network of Reference Laboratories for Human Influenza in Europe (CNRL) coordination team.

Since week 40/2011, none of the A(H3N2) and B viruses tested for susceptibility to neuraminidase inhibitors were resistant (Table 3). However, two oseltamivir resistant A(H1N1)pdm09 viruses carrying the NA H275Y substitution, which retained zanamivir sensitivity, have been detected in the Netherlands. All A(H1N1)pdm09 and A(H3N2) viruses assessed for M2 blocker susceptibility were resistant.

Table 2: Weekly and cumulative influenza virus detections by type, sub-type and surveillance system, weeks 40/2011–38/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	0	7	8466	24546
A(H1)pdm09	0	1	118	327
A(H3)	0	2	7686	7879
A(sub-type unknown)	0	4	662	16340
Influenza B	0	16	1027	1574
B(Vic) lineage	0	0	115	81
B(Yam) lineage	0	2	76	90
Unknown lineage	0	14	836	1403
Total influenza	0	23	9493	26120

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 40/2011–38/2012

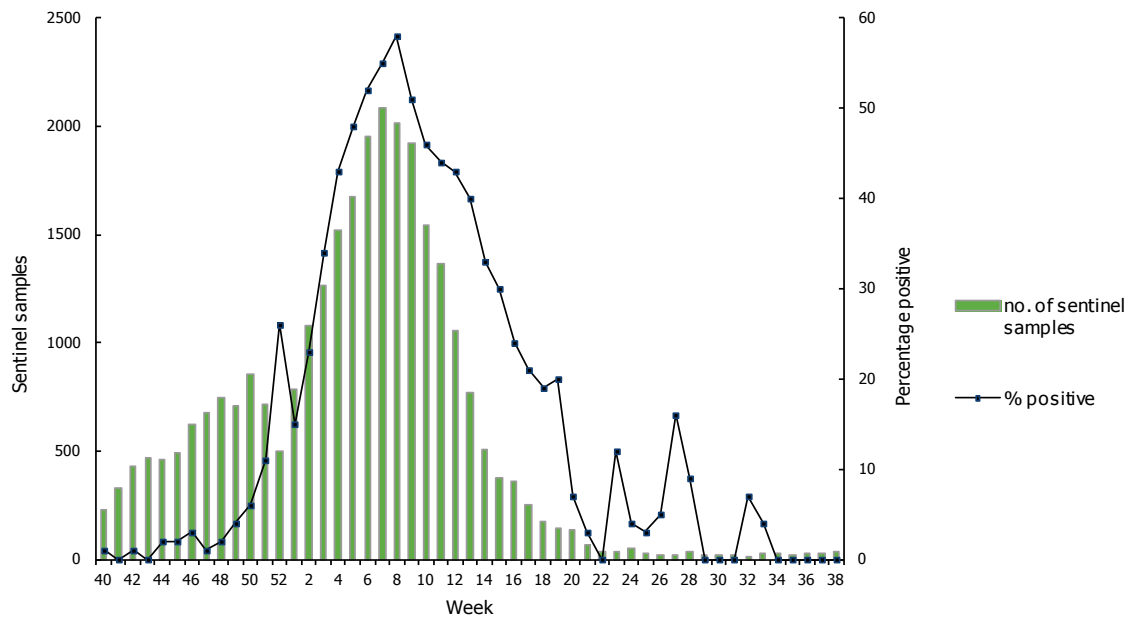


Figure 2: Number of sentinel specimens positive for influenza virus, by type, subtype and week of report, weeks 40/2011–38/2012

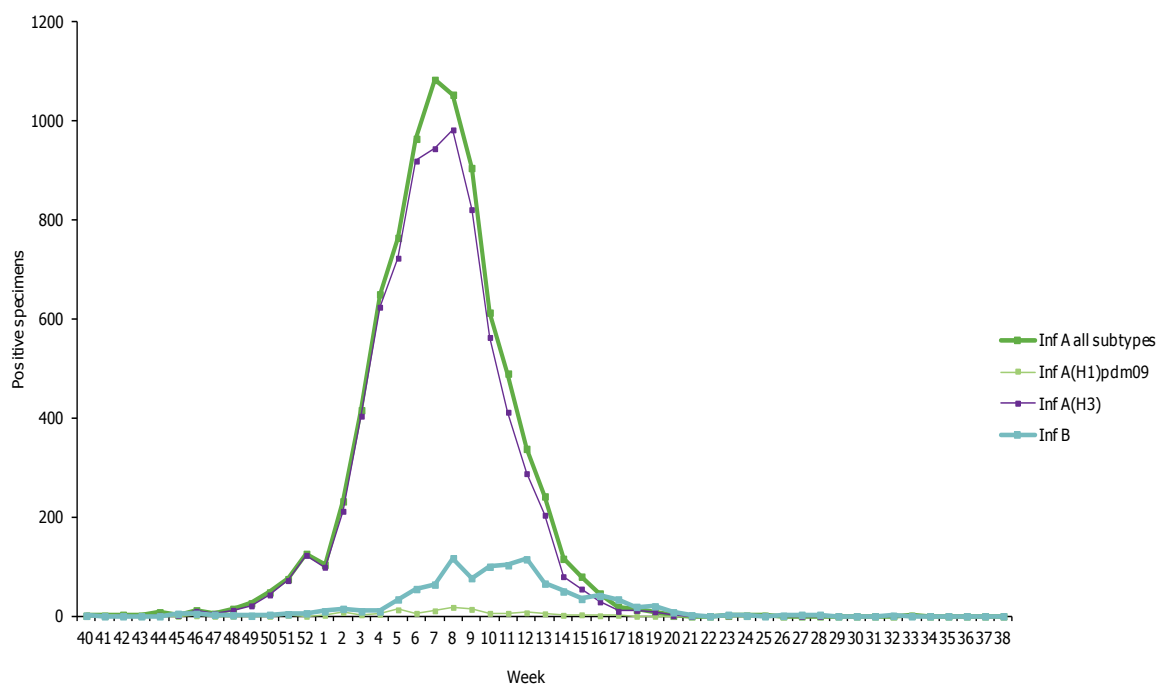


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2011–38/2012

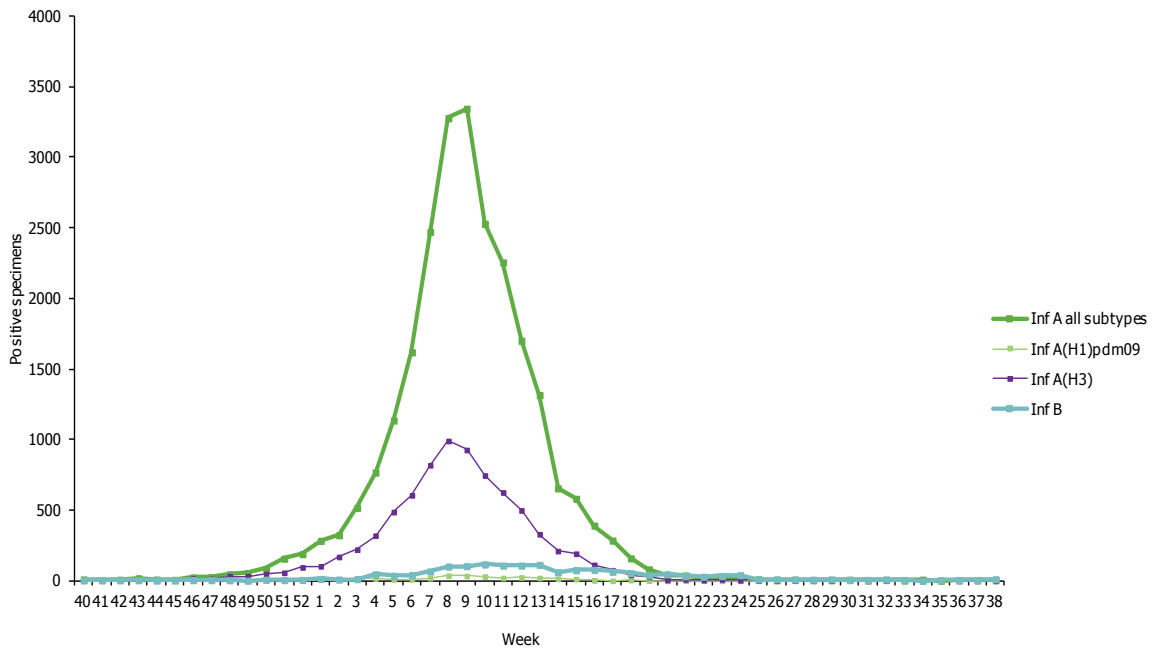


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–38/2012

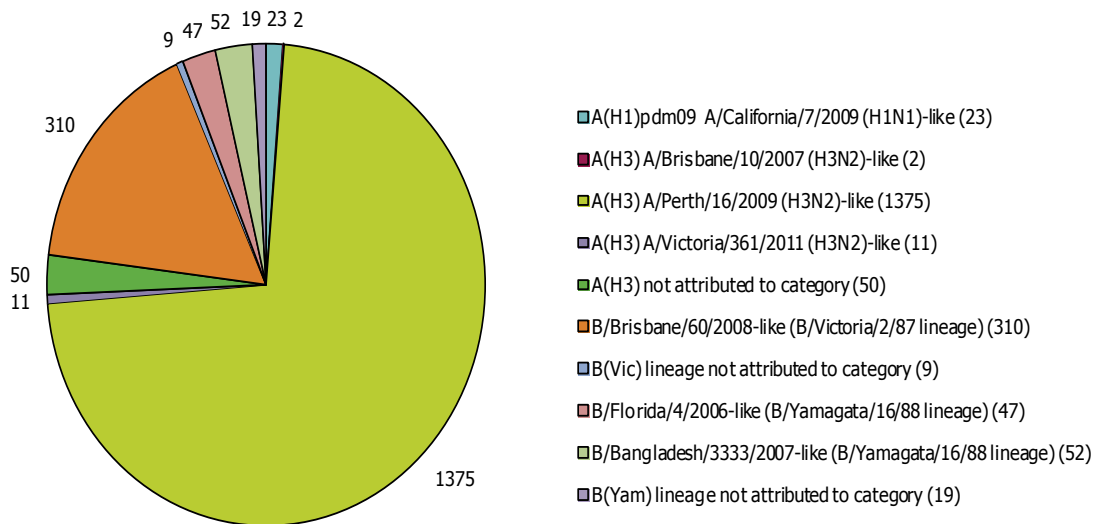


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–38/2012

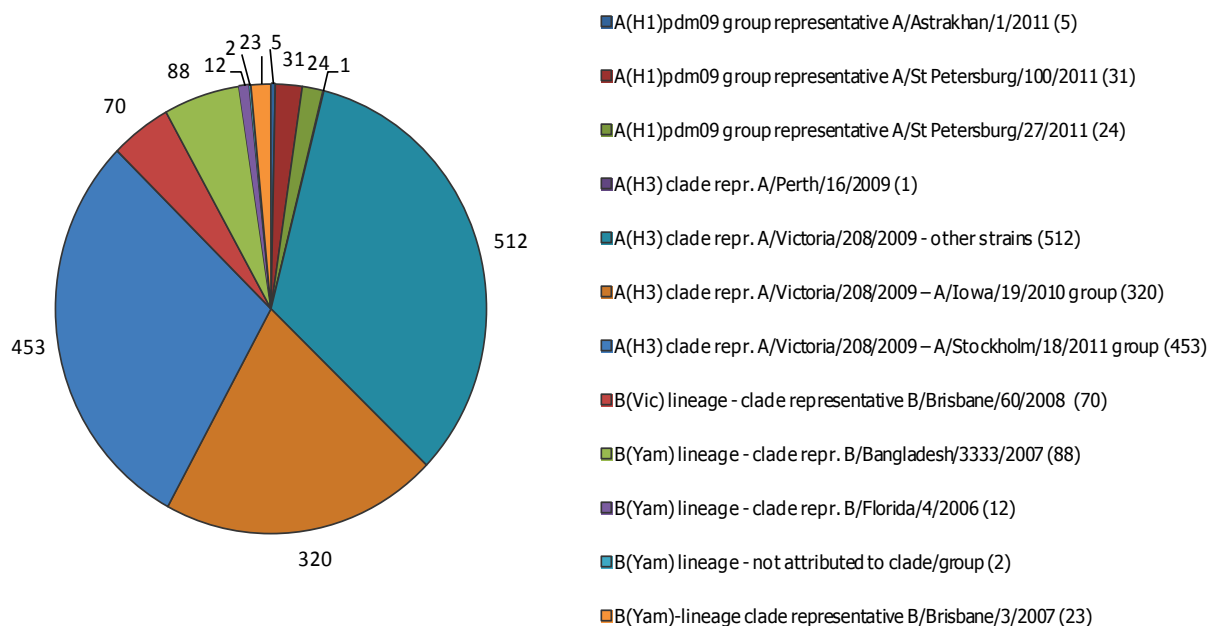


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2011–38/2012

Virus type and subtype	Resistance to neuraminidase inhibitors				Resistance to M2 inhibitors	
	Oseltamivir		Zanamivir		Isolates tested	Resistant n (%)
	Isolates tested	Resistant n (%)	Isolates tested	Resistant n (%)		
A(H3N2)	821	0	803	0	242	242 (100%)
A(H1N1)pdm09	71	2 (2.8%)	71	0	35	35 (100%)
B	73	0	68	0	NA*	NA*

* NA - not applicable, as M2 inhibitors do not act against influenza B viruses. Data are from single location (e.g. H275Y only) or multiple location mutation analysis (full sequencing) and/or phenotypic characterisation (IC50 determination). Therefore, data should be interpreted in this context.

Country comments

Spain: During weeks 21–39/2012, only virological influenza surveillance is active in Spain. Qualitative activity indicators (intensity level and geographic spread) are not provided by sentinel sites. Weekly virological influenza detections (mainly from non-sentinel sources) are being notified. A case of severe influenza A(H1N1)pdm09 was reported in the Autonomous Community of Madrid during week 34/2012. The patient, who had a recent history of travel to Nepal, fully recovered. No other cases of A(H1N1)pdm09 have been reported in this area since week 20/2012. The National Influenza Centre of Madrid is conducting testing for antiviral resistance. Fortnightly Spanish Influenza Surveillance reports are available in: www.isciii.es/cne-gripe-infsemanal

Description of the system

According to the nationally defined sampling strategy, sentinel physicians take nasal or pharyngeal swabs from patients with influenza-like illness (ILI), acute respiratory infection (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 on the current virus strains recommended by WHO for vaccine preparation [click here](#).

Hospital surveillance – severe influenza disease

Weekly analysis of severe acute respiratory infection – SARI

Since week 40/2011, a total of 1 842 SARI cases, including 113 fatalities, have been reported to TESSy by seven countries (Table 4, Figure 6). Where patient information was available, the male/female ratio was 1.2 (Table 5).

During weeks 37–38/2012, no SARI cases were reported.

Since week 40/2011, 1 327 severe cases have been confirmed as being associated with influenza virus infection. Of these, 1 278 (96.3%) were type A and 49 (3.7%) were type B viruses. Of 853 subtyped influenza A viruses, 805 (94.4%) were A(H3) and 48 (5.6%) were A(H1)pdm09 viruses (Table 6).

Table 4: Cumulative number of SARI cases, weeks 40/2011–38/2012

Country	Number of cases	Incidence of SARI cases per 100 000 population	Number of fatal cases reported	Incidence of fatal cases per 100 000 population	Estimated population covered
Belgium	272		8		
France	310		43		
Ireland	20		5		
Romania	346	5.95	6	0.1	5813728
Slovakia	30	0.55	1	0.02	5435273
Spain	612		50		
United Kingdom	252	0.43			59255492
Total	1842		113		

Figure 6: Number of SARI cases by week of onset, weeks 40/2011–38/2012

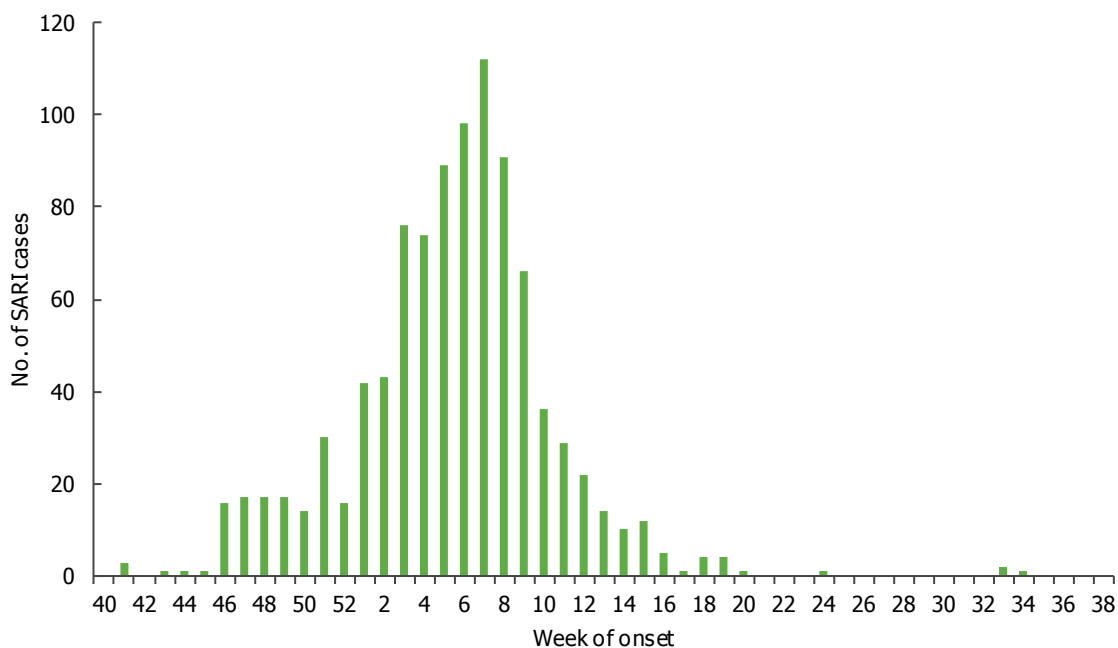


Table 5: Number of SARI cases by age and gender, weeks 40/2011–38/2012

Age groups	Male	Female	Unknown
Under 2	180	123	1
2-17	163	117	4
18-44	75	79	1
45-59	106	89	
>=60	333	305	2
Unknown	8	3	253
Total	865	716	261

Table 6: Number of SARI cases by influenza type and subtype and other pathogens, weeks 37–38/2012 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A		1278
A(H1)pdm09		48
A(H1)		
A(H3)		805
A(sub-typing not performed)		425
Influenza B		49
Other pathogen		6
Unknown		509
Total		1842

This report was written by an editorial team at the European Centre for Disease Prevention and Control (ECDC): Eeva Broberg, Flaviu Plata, 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) and Suzie Coughlan (UCD National Virus Reference Laboratory, Ireland). In addition, the report is reviewed by experts of WHO Regional Office for Europe.

Maps and commentary published in this Weekly Influenza Surveillance Overview (WISO) do not represent a statement on the part of ECDC or its partners on the legal or border status of the countries and territories shown.

All data published in the WISO are up-to-date on the day of publication. Past this date, however, published data should not be used for longitudinal comparisons as countries tend to retrospectively update their database.

© European Centre for Disease Prevention and Control, Stockholm, 2012