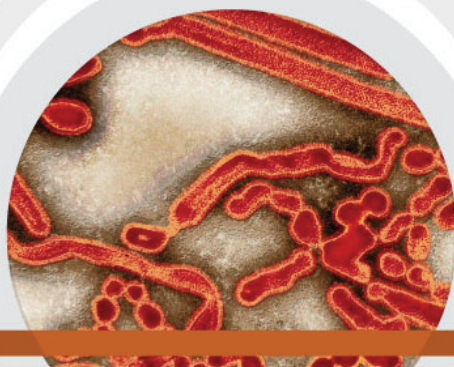


SURVEILLANCE REPORT



Weekly influenza surveillance overview

5 October 2012

Main surveillance developments in week 39 (24–30 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.

During the influenza 2012 off-season period (weeks 21 to 39), influenza viruses circulated very sporadically: 16 influenza viruses were detected in sentinel sources. During the last week of the previous season (week 39/2012) the following were noted:

- Low influenza activity and absence of geographic spread (the lowest categories) reported by all reporting countries.
- No influenza virus was detected in sentinel samples from 17 countries reporting virological data.
- As in previous weeks, no hospitalised severe influenza cases were reported.

Although the 2012–2013 influenza season is approaching, there is no evidence as yet that transmission has started in Europe.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): All reporting countries experienced low-intensity influenza activity and no geographic spread was reported. For more information, [click here](#).

Virological surveillance: In 17 countries reporting virological data, 41 sentinel specimens were tested for influenza and none was positive (Tables 1 and 2, Figure 1). For more information, [click here](#).

Hospital surveillance of severe acute respiratory infection (SARI): As in previous weeks, no hospitalised severe influenza was reported in week 39/2012. For more information, [click here](#).

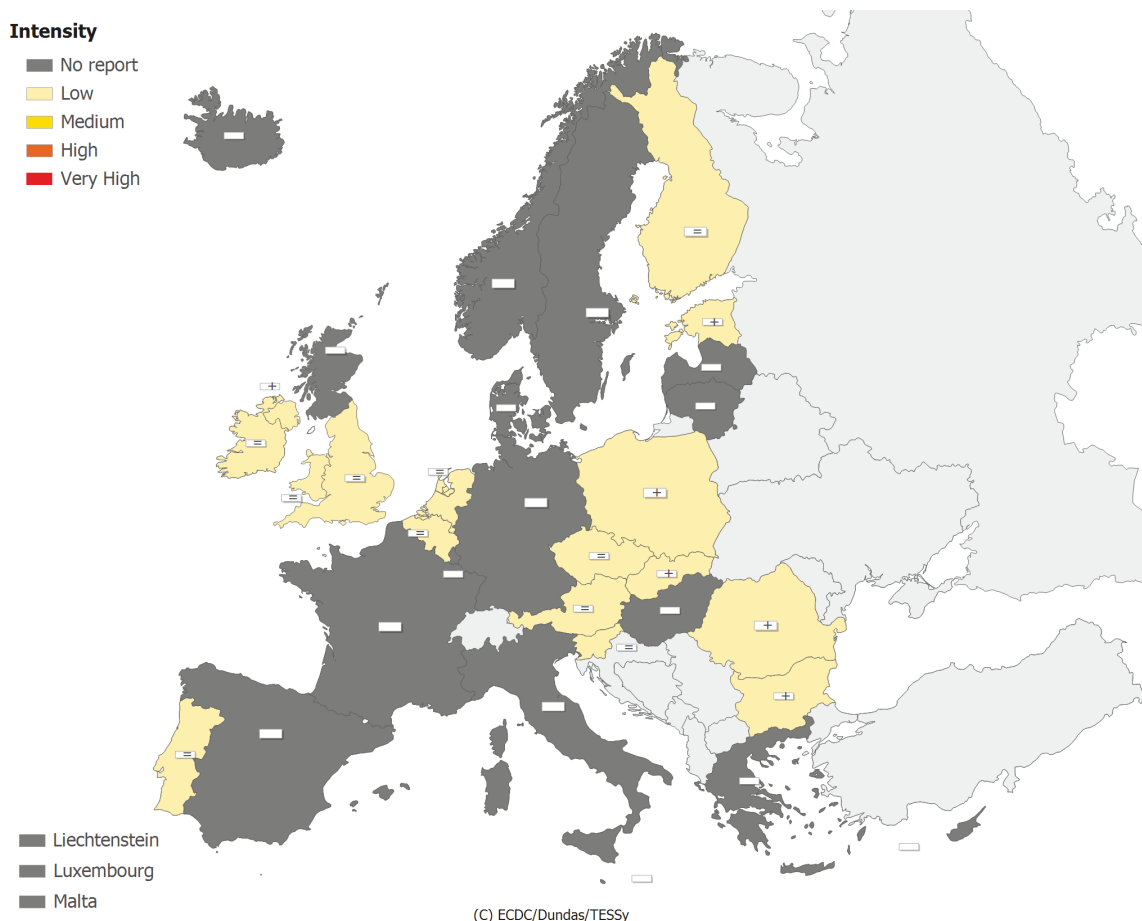
Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

In week 39/2012, 15 countries reported clinical data. All reporting countries experienced low-intensity influenza activity and no geographic spread (Table 1, Maps 1 and 2).

Stable trends were reported by eight countries and the UK (England, Wales). However, increasing trends were reported by five countries (Bulgaria, Estonia, Poland, Romania and Slovakia) and the UK (Northern Ireland) (Table 1).

Map 1: Intensity for week 39, 2012

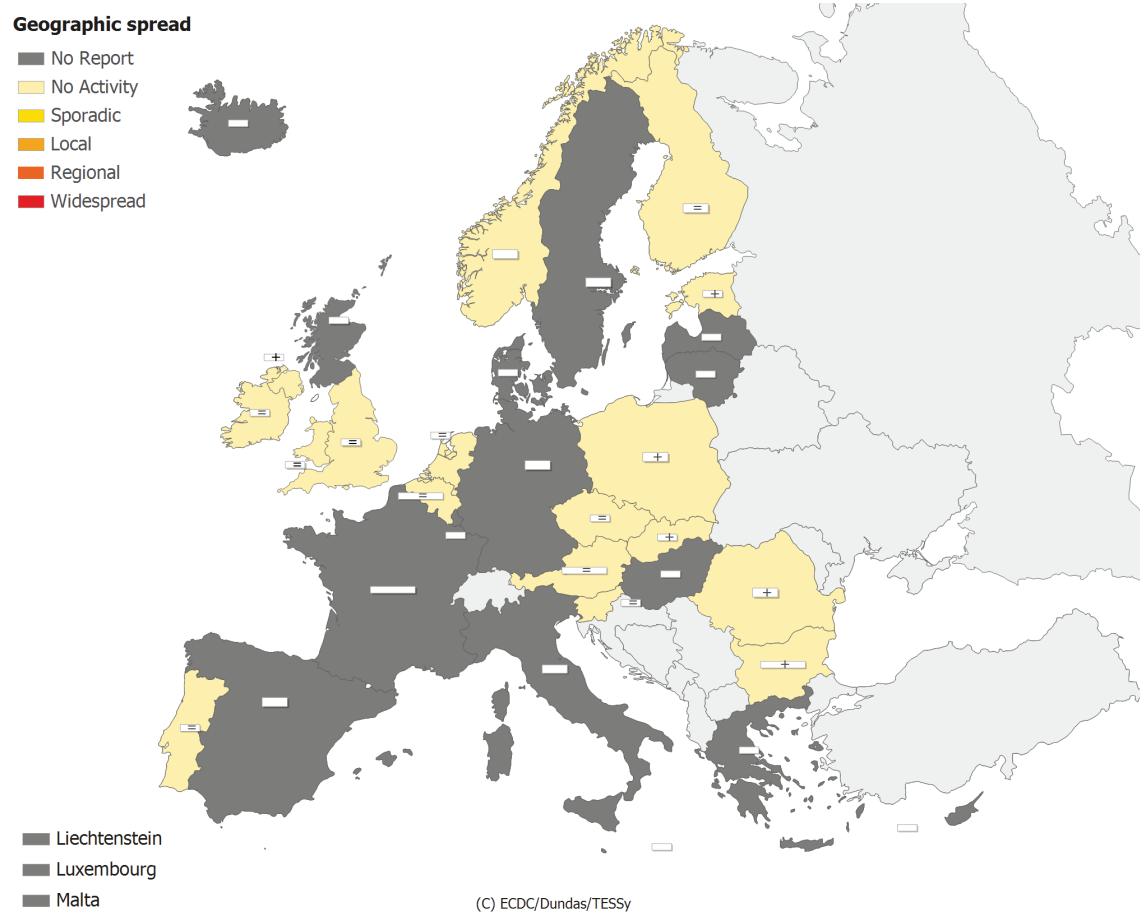


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.
Legend:

No report	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		
Very high	Particularly severe levels of influenza activity		

*The map only displays data for the most recently 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 week 39, 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
		=	Stable clinical activity
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)		

*The map only displays data for the most recently 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, week 39 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	79.0	2086.8	Graphs	Graphs
Bulgaria	Low	No activity	Increasing	0	None	0.0	-	397.6	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	No activity	Stable	-	-	0.0	14.8	643.2	Graphs	Graphs
Denmark				0	None	0.0	-	-	Graphs	Graphs
Estonia	Low	No activity	Increasing	-	-	0.0	4.0	278.1	Graphs	Graphs
Finland	Low	No activity	Stable	14	None	0.0	-	-	Graphs	Graphs
France				-	-	0.0	-	-		
Germany				8	None	0.0	-	-	Graphs	Graphs
Greece				0	-	0.0	-	-	Graphs	Graphs
Hungary				-	-	0.0	-	-		
Iceland				-	-	0.0	-	-		
Ireland	Low	No activity	Stable	5	None	0.0	7.1	-	Graphs	Graphs
Italy				-	-	0.0	-	-		
Latvia				-	-	0.0	-	-		
Lithuania				0	None	0.0	-	-	Graphs	Graphs
Luxembourg				-	-	0.0	-	-		
Malta				-	-	0.0	-	-		
Netherlands	Low	No activity	Stable	6	None	0.0	31.4	-	Graphs	Graphs
Norway	No information available	No activity	No information available	0	None	0.0	-	-	Graphs	Graphs
Poland	Low	No activity	Increasing	3	None	0.0	89.4	-	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	569.9	Graphs	Graphs
Slovakia	Low	No activity	Increasing	0	None	0.0	148.5	1485.0	Graphs	Graphs
Slovenia	Low	No activity	Stable	0	None	0.0	0.0	1002.3	Graphs	Graphs
Spain				-	-	0.0	-	-		
Sweden				0	-	0.0	-	-	Graphs	Graphs
UK - England	Low	No activity	Stable	4	None	0.0	4.0	280.2	Graphs	Graphs
UK - Northern Ireland	Low	No activity	Increasing	0	-	0.0	9.8	340.0	Graphs	Graphs
UK - Scotland				-	-	0.0	-	-		
UK - Wales	Low	No activity	Stable	1	-	0.0	3.3	-	Graphs	Graphs
Europe				41		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 qualitative indicators (intensity, geographic spread, trend and dominant type) the table displays data for the most recent reported week only, of the two-week surveillance period. For the no. of sentinel swabs, the table displays a sum of both weeks and the percentage positive is calculated based on both weeks' data. For the ILI and ARI rates, the average rate of two weeks is shown.

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

In week 12/2012, 17 countries reported virological data. Of 41 sentinel specimens tested, none was positive for influenza virus (Tables 1 and 2, Figure 1).

In addition, 20 non-sentinel source specimens, e.g. specimens collected for diagnostic purposes in hospitals, were found positive for influenza virus. Ten were influenza A viruses and ten were B viruses. From four sub-typed influenza viruses, all were type A(H3) and from four influenza B viruses with available lineage, three belonged to the B (Victoria) lineage and one to the B (Yamagata) lineage (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. Of the 7 804 subtyped sentinel influenza A viruses, 7 686 (98.5%) were A(H3) viruses and 118 (1.5%) were A(H1)pdm09 (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.

During the off-season period, i.e. between weeks 21/2012 and 39/2012, circulation of influenza viruses in sentinel settings was low: of 16 influenza viruses detected, 12 were identified as B viruses and four were A viruses. In subtyped influenza A viruses, three were A(H3) viruses and one was an A(H1)pdm09 virus. Detection of influenza viruses in non-sentinel source specimens was more significant (in absolute numbers): of 352 influenza viruses detected, 207 were influenza B viruses and 145 were influenza A viruses. In subtyped viruses from the latter group, 46 (88.5%) were A(H3) and six (11.5%) were A(H1)pdm09 viruses.

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, 1 546 genetic characterisations of influenza viruses have been reported, 1 287 (83.2%) of which were A(H3) viruses (Figure 5). Of the latter, 453 (35.2%) were within the A/Victoria/208/2009 clade, genetic group 3 represented by A/Stockholm/18/2011. Viruses falling in this 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) (Kisling 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 [September 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, subtype and surveillance system, weeks 40/2011–39/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	0	10	8466	24564
A(H1)pdm09	0	0	118	327
A(H3)	0	4	7686	7891
A(sub-type unknown)	0	6	662	16346
Influenza B	0	10	1027	1584
B(Vic) lineage	0	3	115	84
B(Yam) lineage	0	1	76	92
Unknown lineage	0	6	836	1408
Total influenza	0	20	9493	26148

Note: A(H1)pdm09 and A(H3) include both N-sub-typed and non-N-sub-typed viruses

Figure 1: Proportion of sentinel specimens positive for influenza virus, weeks 40/2011–39/2012

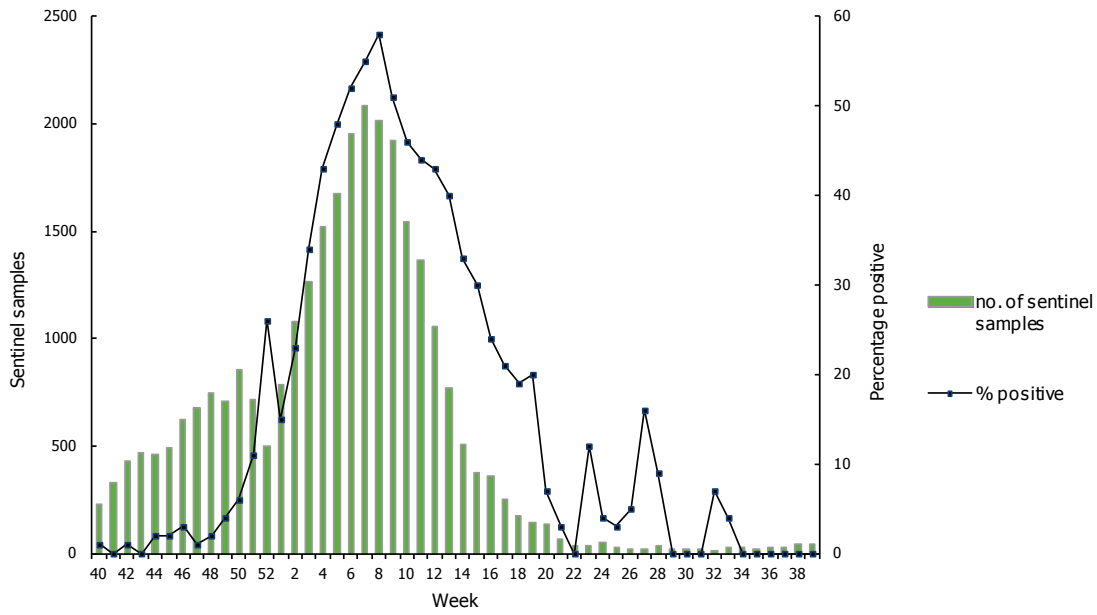


Figure 2: Number of sentinel specimens positive for influenza virus, by type, subtype and week of report, weeks 40/2011–39/2012

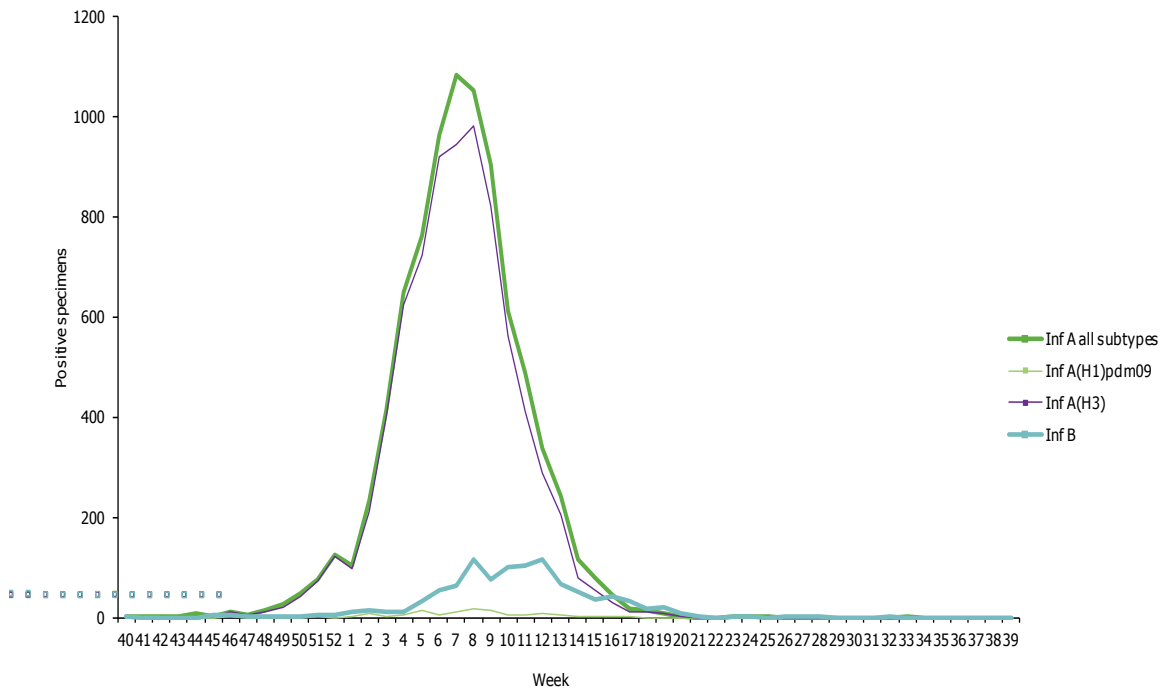


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2011–39/2012

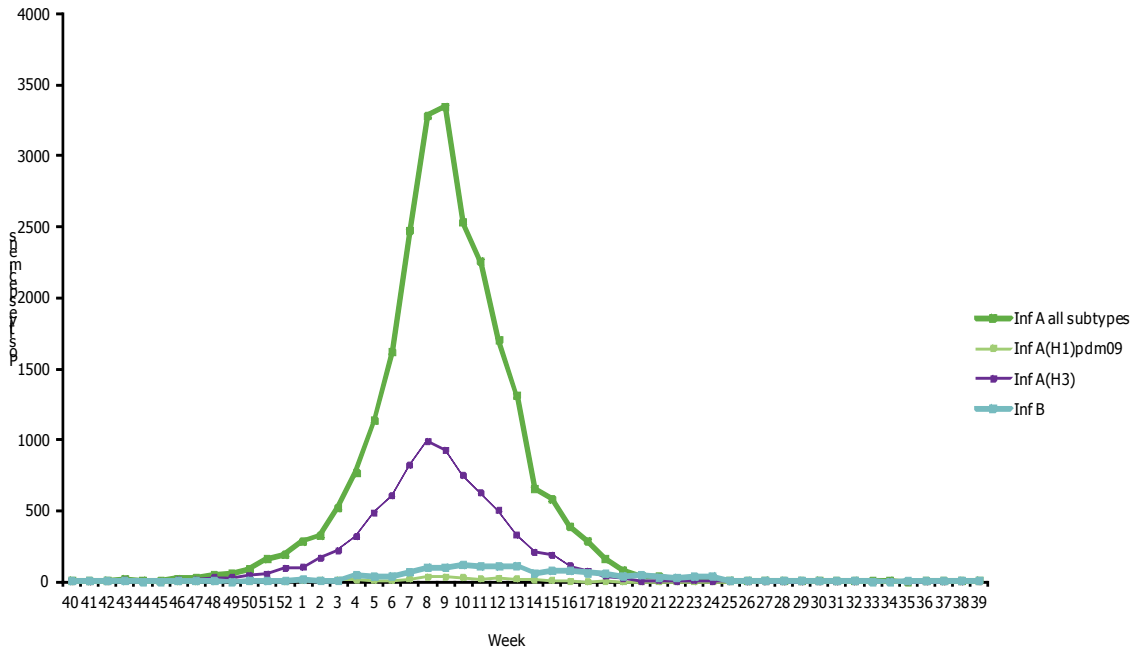


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–39/2012

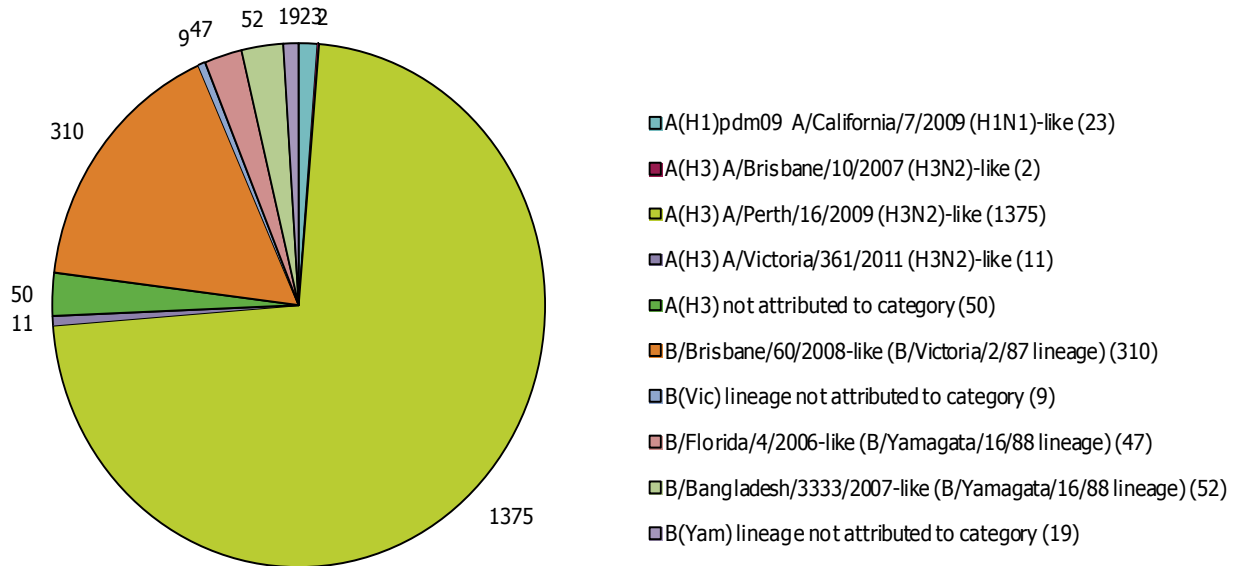


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–39/2012

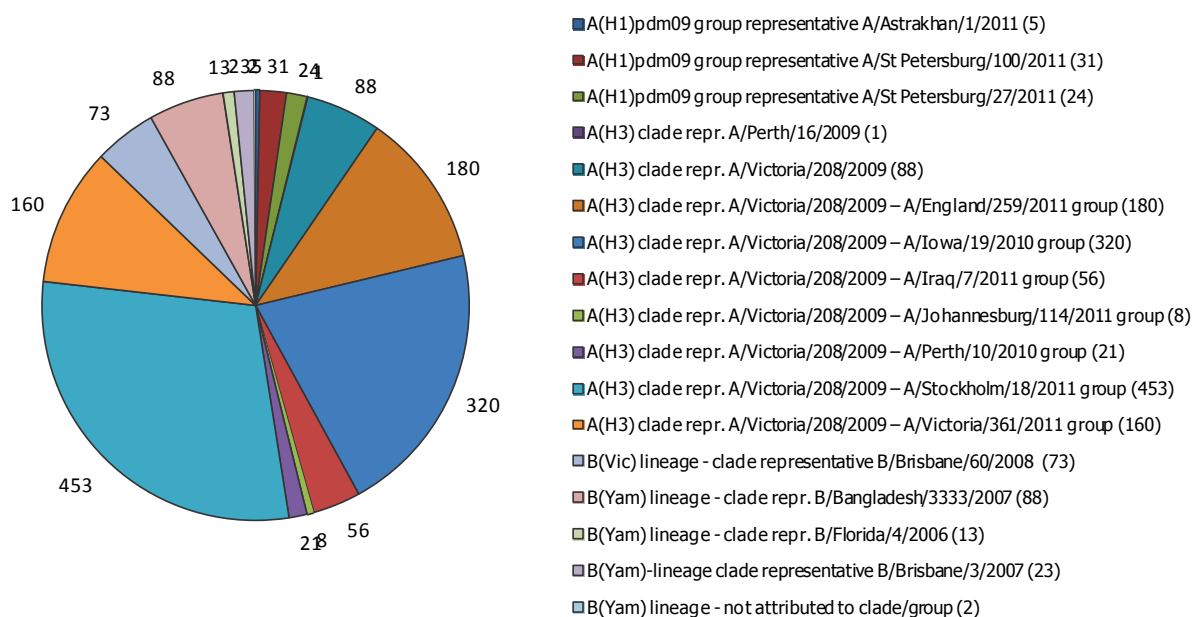


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2011–39/2012

Virus type and sub-type	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)2009	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

Denmark: The H3N2 virus detected was isolated from a person returning from a trip with transfer in Qatar. The person is assumed to have infected her husband and child on return to Denmark. The H3N2 virus is genetically close to the A/Victoria/361/11 virus, included in the 2011/12 vaccine, serology is ongoing. The three influenza B Victoria (Victoria) lineage virus positive cases were all from the same family. The father had travelled from Qatar and infected his two children on return to Denmark. The influenza B (Yamagata) lineage virus positive case was from a person returning from a trip with transfer in Qatar. All persons were tested using differential diagnostics on the suspicion they had been infected with the novel coronavirus.

Norway: Recent cases of influenza B infections have mostly been associated with travel abroad.

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

As during previous weeks, no additional severe cases were reported in week 39/2012.

In summary, 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).

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. Of 853 sub-typed influenza A viruses, 805 (94.4%) were A(H3) and 48 (5.6%) were A(H1)pdm09 (Table 6).

Table 4: Cumulative number of SARI cases, weeks 40/2011–39/2012

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 40/2011–39/2012

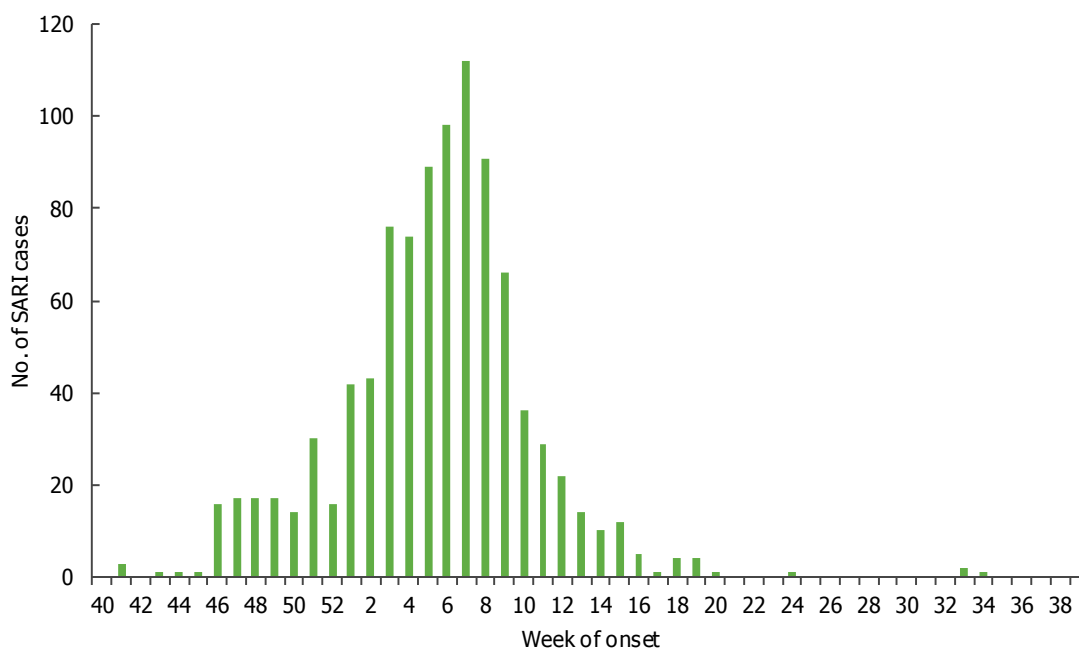


Table 5: Number of SARI cases by age and gender, weeks 40/2011–39/2012

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, week 39 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.

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