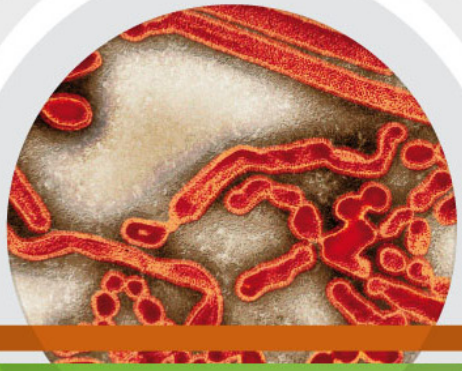


SURVEILLANCE REPORT

Fortnightly influenza surveillance overview

21 June 2012

Main surveillance developments in weeks 23–24 2012 (4–17 June 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 2011–2012 influenza season has ended but the surveillance of influenza will continue during the off-season period and the bulletin appears on a fortnightly basis until week 40/2012.

- During weeks 23–24/2012, all sixteen countries reporting experienced low-intensity influenza activity.
- Of 68 sentinel specimens, one was positive for influenza type B virus. Since week 40/2011, 89.3% of the detected influenza viruses have been type A and 10.7% type B. The A(H3) subtype represented 98.5% of influenza A type viruses detected during the 2011–2012 season.
- 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. The need for change is consistent with an observed low vaccine effectiveness for the A(H3N2) component.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): During weeks 23–24/2012, sixteen countries reported low intensity of influenza activity and decreasing or stable trends. For more information, **click here**.

Virological surveillance: Of 68 sentinel specimens tested, one (1.5%) was positive for type B influenza virus. For more information, **click here**.

Hospital surveillance of severe acute respiratory infection (SARI): During weeks 23–24/2012, no SARI cases were reported. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

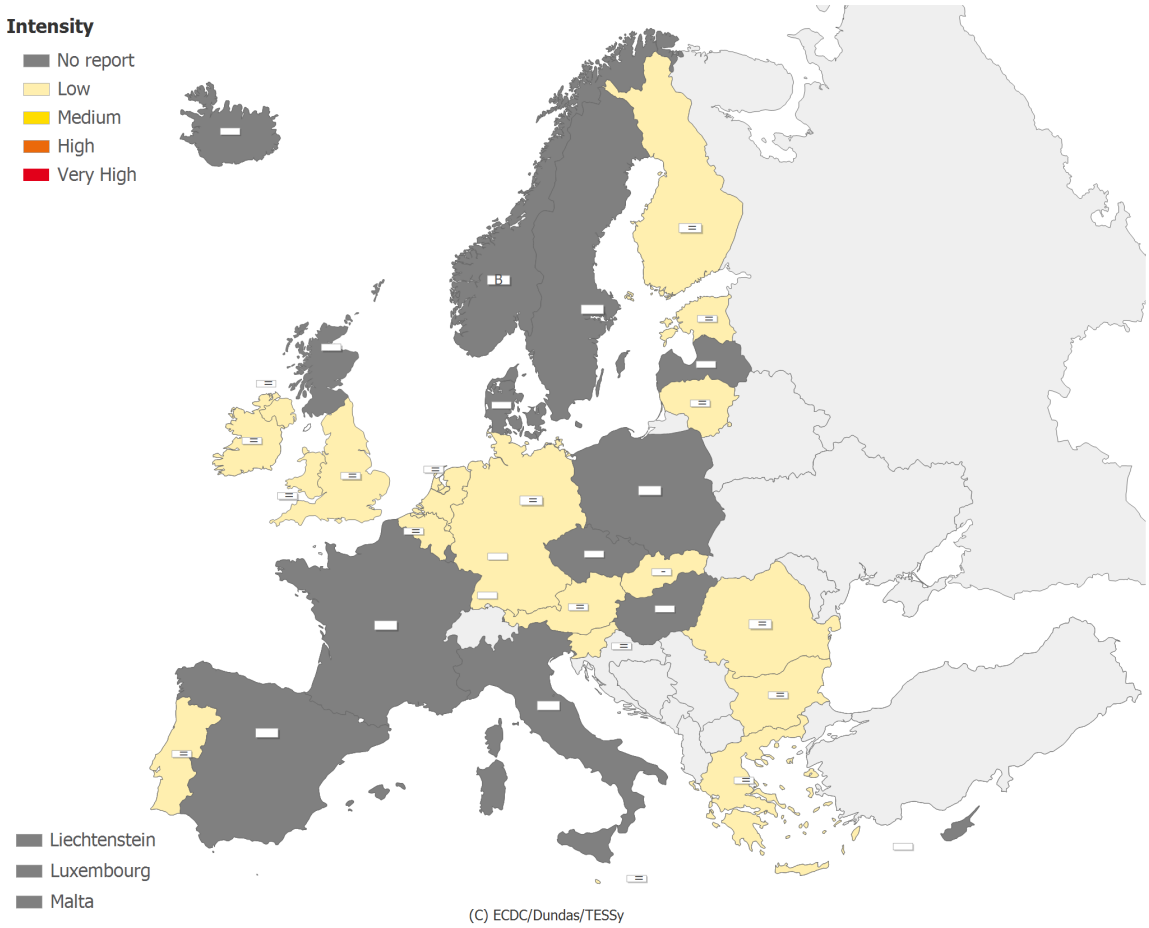
Weekly analysis – epidemiology

During weeks 23–24/2012, sixteen countries reported on the intensity of influenza activity. All reporting countries experienced low intensity during both weeks (Table 1, Map 1).

During week 23, no geographic spread was reported by 13 countries while Malta reported local and Norway reported sporadic geographic spread. During week 24, all countries reported no geographic spread.

Stable trends in clinical activity were reported by 13 countries while a decreasing trend was reported by Romania in week 23 and by Slovakia for both weeks (Table 1, Map 2).

Map 1: Intensity for Weeks 23-24/2012



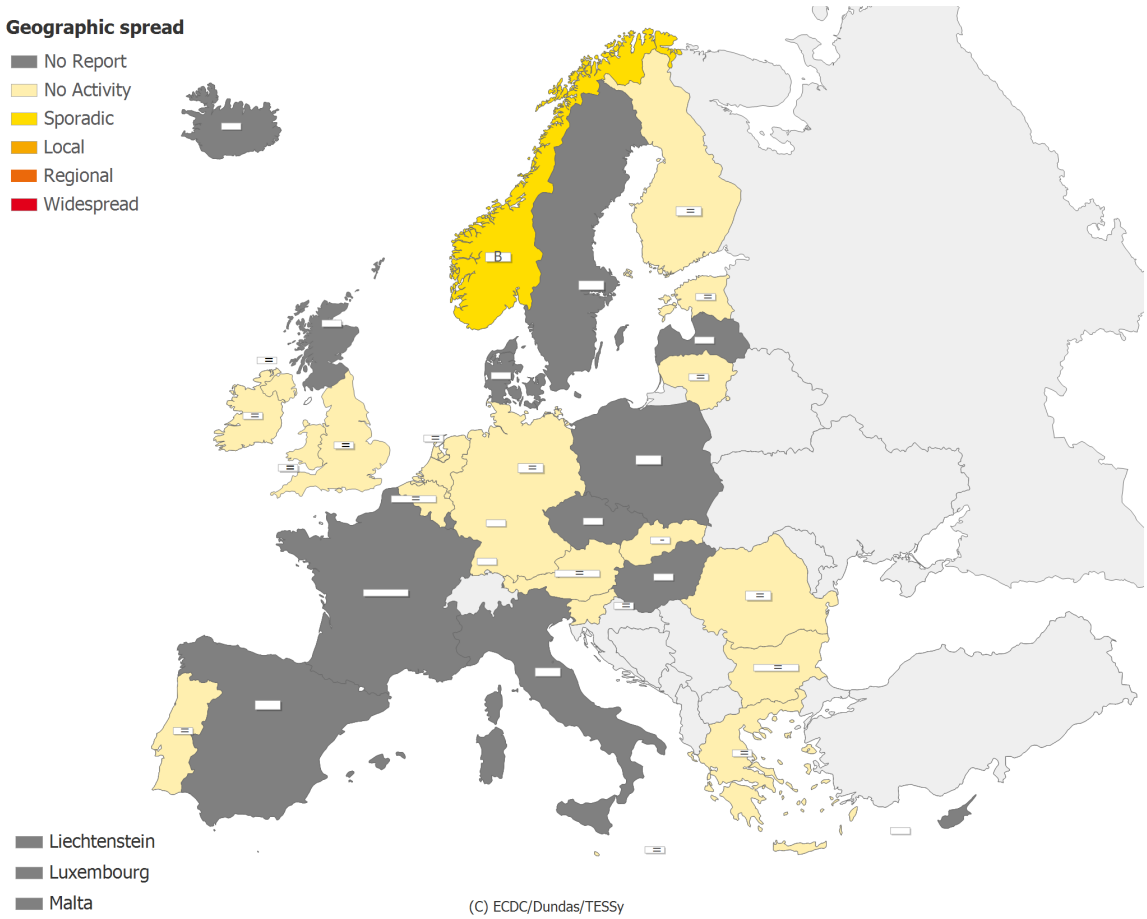
* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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 displays data for the most recent reported week, of the two-week surveillance period. For the individual week's information please consult the weekly 'Influenza activity maps' here.*

Map 2: Geographic spread for Weeks 23-24/2012



* 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)		
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 displays data for the most recent reported week, of the two-week surveillance period. For the individual week's information please consult the weekly 'Influenza activity maps' here.*

Table 1: Epidemiological and virological overview by country, weeks 23–24/2012

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	None	0.0	24.3	1238.1	Graphs	Graphs
Bulgaria	Low	No activity	Stable	0	None	0.0	-	365.4	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic				-	-	0.0	-	-		
Denmark				0	None	0.0	-	-	Graphs	Graphs
Estonia	Low	No activity	Stable	0	None	0.0	2.7	125.6	Graphs	Graphs
Finland	Low	No activity	Stable	27	None	0.0	-	-	Graphs	Graphs
France				7	-	0.0	-	-	Graphs	Graphs
Germany	Low	No activity	Stable	9	None	0.0	-	539.5	Graphs	Graphs
Greece	Low	No activity	Stable	0	-	0.0	16.9	-	Graphs	Graphs
Hungary				-	-	0.0	-	-		
Iceland				0	-	0.0	-	-	Graphs	Graphs
Ireland	Low	No activity	Stable	5	None	0.0	1.5	-	Graphs	Graphs
Italy				-	-	0.0	-	-		
Latvia				0	None	0.0	-	-	Graphs	Graphs
Lithuania	Low	No activity	Stable	0	None	0.0	-	-	Graphs	Graphs
Luxembourg				-	-	0.0	-	-		
Malta	Low	No activity	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Netherlands	Low	No activity	Stable	9	None	11.1	29.1	-	Graphs	Graphs
Norway	Unknown (no information available)	Sporadic		0	B	0.0	-	-	Graphs	Graphs
Poland				-	-	0.0	-	-		
Portugal	Low	No activity	Stable	0	None	0.0	0.0	-	Graphs	Graphs
Romania	Low	No activity	Stable	2	None	0.0	0.1	424.1	Graphs	Graphs
Slovakia	Low	No activity	Decreasing	0	None	0.0	73.2	961.4	Graphs	Graphs
Slovenia	Low	No activity	Stable	1	None	0.0	0.0	542.8	Graphs	Graphs
Spain				0	None	0.0	-	-	Graphs	Graphs
Sweden				-	-	0.0	-	-		
UK - England	Low	No activity	Stable	7	None	0.0	2.8	245.4	Graphs	Graphs
UK - Northern Ireland	Low	No activity	Stable	0	-	0.0	4.9	231.3	Graphs	Graphs
UK - Scotland				-	-	0.0	-	-		
UK - Wales	Low	No activity	Stable	1	None	0.0	2.0	-	Graphs	Graphs
Europe				**68**		**1.5**				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 number 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

During weeks 23–24/2012, 19 countries reported virological data. Of 68 sentinel specimens tested, one (1.5%) was positive for influenza B virus (Tables 1-2, Figure 1).

Of the 72 influenza viruses detected from sentinel and non-sentinel sources during weeks 23–24/2012, 21 (29.2%) were type A and 51 (70.8%) were type B (Table 2). Of the 9 475 influenza virus detections in sentinel specimens since week 40/2011, 8 464 (89.3%) were type A and 1 011 (10.7%) were type B. Of the 7 796 sentinel influenza A viruses subtyped, 7 679 (98.5%) were A(H3) viruses and 117 (1.5%) were A(H1)pdm09 (Table 2, Figure 2). The lineage of 189 sentinel influenza B viruses has been determined: 114 (60.3%) were of the B/Victoria/2/87 and 75 (39.7%) were of the B/Yamagata/16/88 lineage.

Since week 40/2011, 1 888 antigenic characterisations of viruses have been reported of which 1 366 (72.4%) were A/Perth/16/2009 (H3N2)-like viruses (Figure 4). Seventy-eight viruses have been reported without category: 50 A(H3), 19 B (Yamagata lineage) and 9 B (Victoria lineage), reflecting changes in antigenicity compared to the previous seasons' reference viruses.

Since week 40/2011, 1 552 genetic characterisations of influenza viruses have been reported, 1 299 (83.7%) of which have been A(H3) viruses (Figure 5). Of the latter, 425 (32.7 %) fell within the A/Victoria/208/2009 clade, genetic group 3 represented by A/Stockholm/18/2011. Viruses falling in this genetic group are antigenically diverse and many display an imperfect match with the current vaccine strain A/Perth/16/2009.

More details on the antigenic and genetic characteristics of circulating viruses can be found in the March report prepared by the Community Network of Reference Laboratories (CNRL) coordination team. Important findings include the fact that many of the recently circulating A(H3N2) viruses yielded low titres with post-infection ferret antisera raised against the A/Perth/16/2009 vaccine virus. This is consistent with WHO's decision to recommend a change to an A/Victoria/361/2011-like virus in the trivalent influenza vaccines for the northern hemisphere 2012–13 influenza season.

Since week 40/2011, none of the A(H1N1)pdm09, A(H3N2) and B viruses tested for susceptibility to neuraminidase inhibitors were resistant (Table 3). 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 40/2011–24/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	0	21	8464	23280
A(H1)pdm09	0	0	117	321
A(H3)	0	2	7679	7610
A(sub-type unknown)	0	19	668	15349
Influenza B	1	50	1011	1390
B(Vic) lineage	0	1	114	80
B(Yam) lineage	0	0	75	83
Unknown lineage	1	49	822	1227
Total influenza	**1**	**71**	**9475**	**24670**

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

Figure 1: Proportion of sentinel specimens positive for influenza virus, weeks 40/2011–24/2012

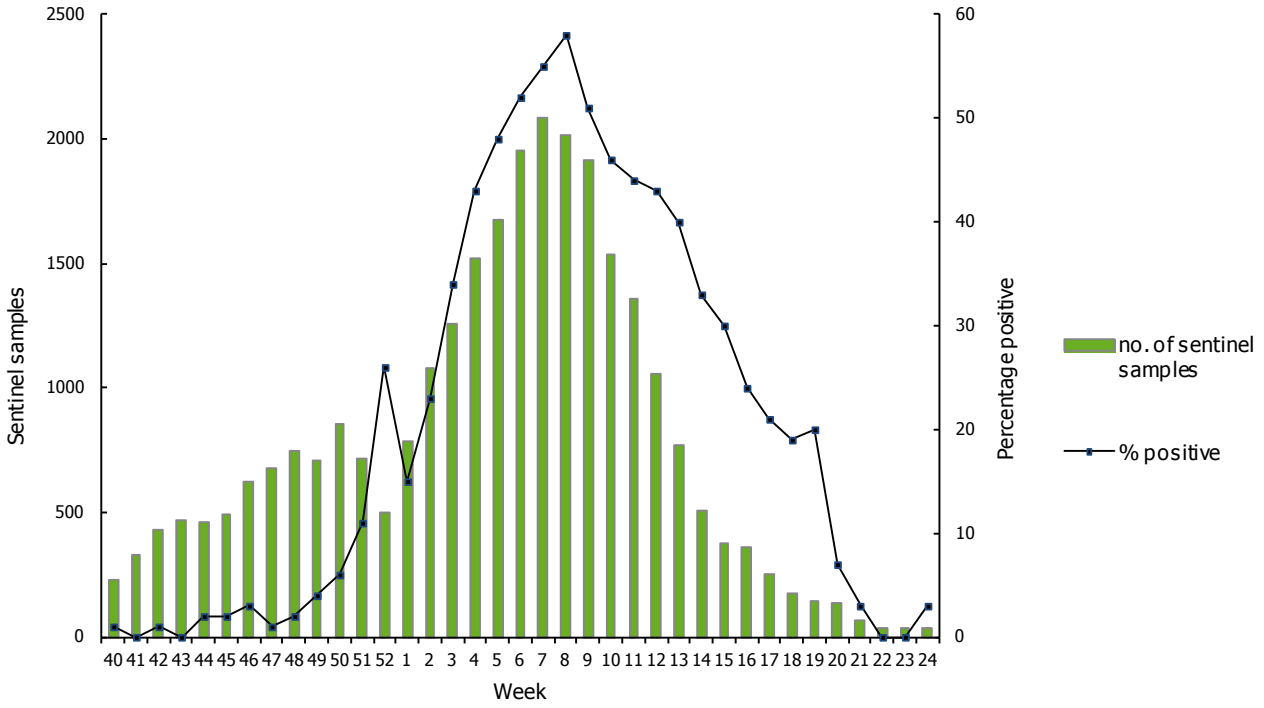


Figure 2: Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40/2011–24/2012

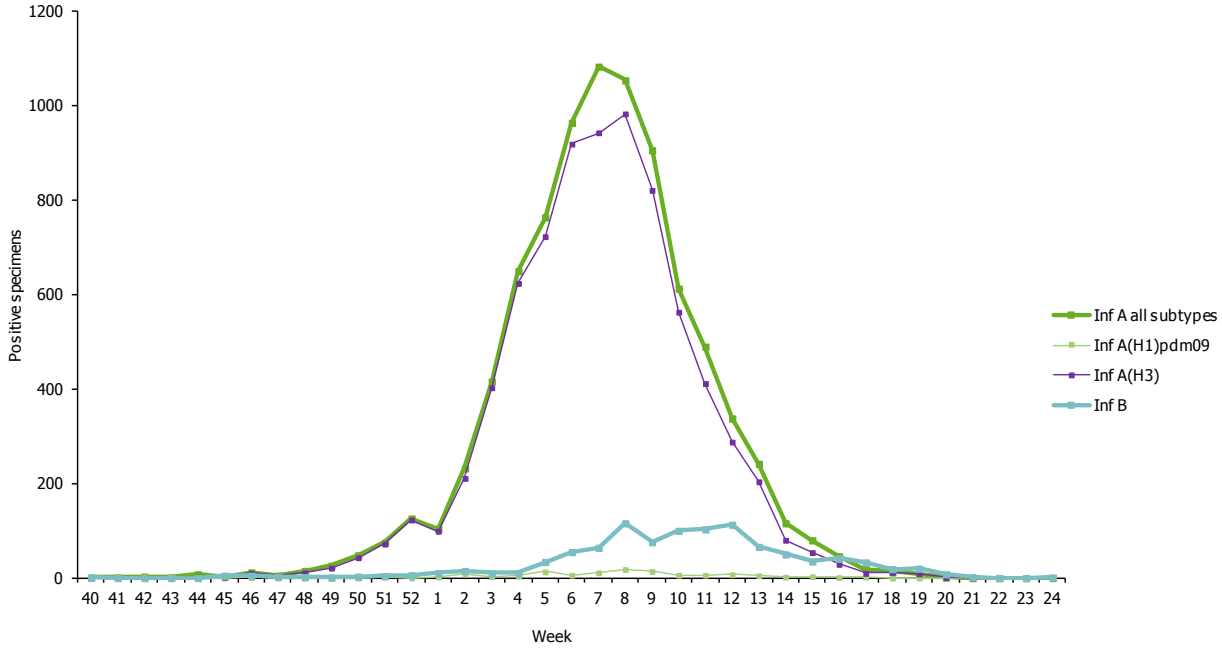


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2011–24/2012

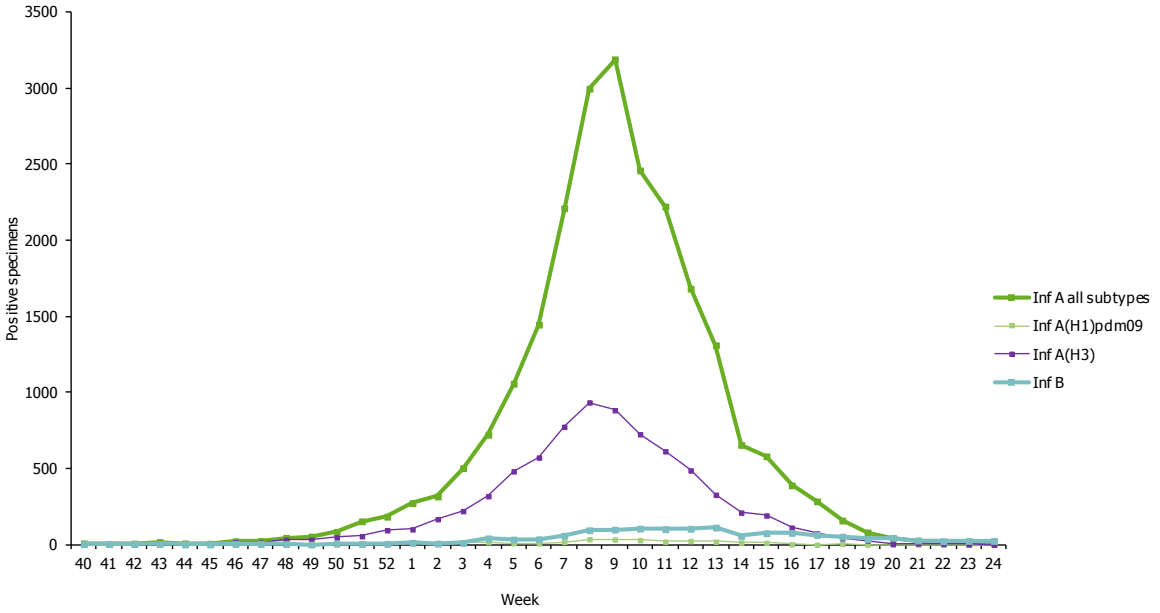


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–24/2012

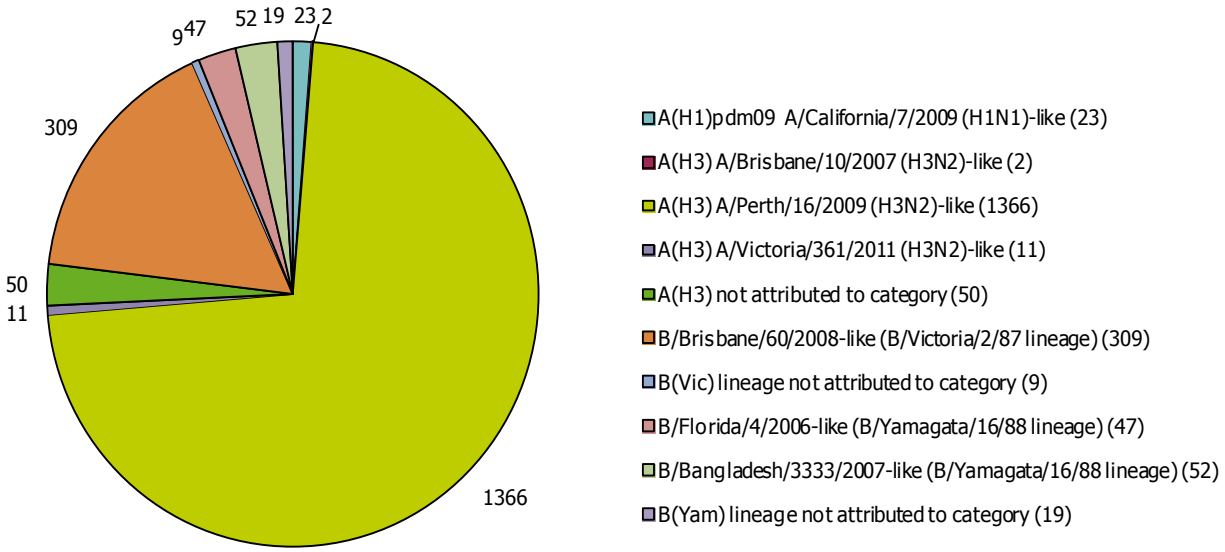


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–24/2012

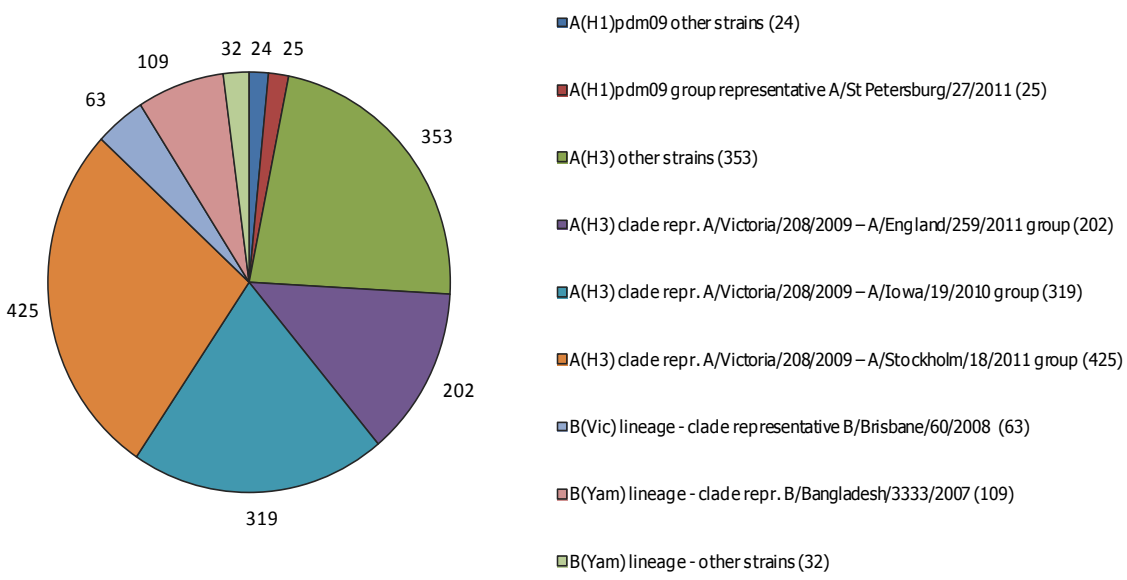


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2011–24/2012

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)	778	0	765	0	179	179 (100%)
A(H1N1)2009	54	0	54	0	11	11 (100%)
B	68	0	63	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

The Netherlands: In an A(H3N2) virus detected in a specimen collected in April 2012, an I222V substitution in the N2 was detected. I222V has previously been associated with slightly reduced susceptibility to neuraminidase inhibitors. However, in combination with E119V it has a synergistic effect on the resistance level against oseltamivir. Furthermore, it has a compensatory role in the replication of A(H3N2) viruses with the E119V substitution in N2. The patient presented with common cold, was vaccinated, not immunocompromised, and not exposed to antivirals, either through therapy or exposure to treated household contacts. Further characterisation of the virus is under way.

Spain: During weeks 21–39/2012, only virological influenza surveillance will be 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.

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 1 835 SARI cases, including 113 fatalities, have been reported to TESSy by seven countries (Table 4). Where patient information was available, the male/female ratio was 1.2 (Table 5).

During weeks 23–24/2012, no SARI cases were reported.

Since week 40/2011, 1 321 cases have been confirmed as being associated with influenza infection. Of 1 321 typed influenza viruses, 1 273 (96.4%) were type A and 48 (3.6%) were type B. Of 825 subtyped influenza A viruses, 778 (94.3%) were A(H3) and 47 (5.7%) were A(H1)pdm09 (Table 6).

Table 4: Cumulative number of SARI cases, weeks 40/2011–24/2012

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	29	0.53	1	0.02	5440078
Spain	606		50		
United Kingdom	252	0.43			59255492
Total	**1835**		**113**		

Figure 6: Number of SARI cases by week of onset, weeks 40/2011–24/2012

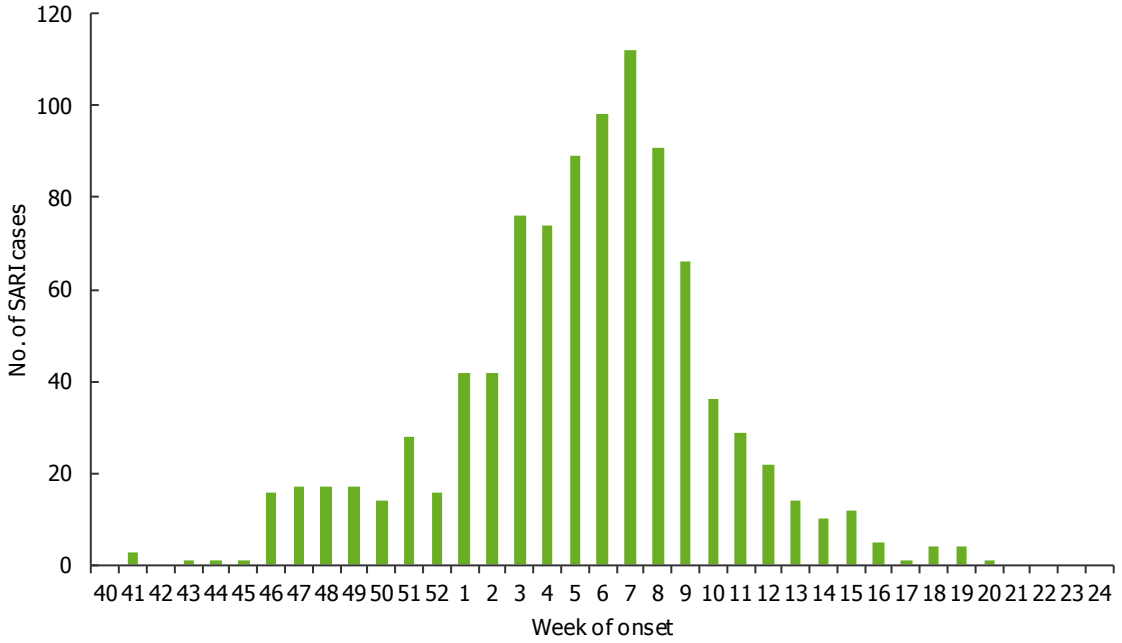


Table 5: Number of SARI cases by age and gender, weeks 40/2011–24/2012

Age groups	Male	Female	Unknown
Under 2	178	122	1
2-17	161	117	4
18-44	75	79	1
45-59	105	89	
>=60	333	304	2
Unknown	8	3	253
Total	**860**	**714**	**261**

Table 6: Number of SARI cases by influenza type and subtype and other pathogens, Weeks 23-24 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		1273
A(H1)pdm09		47
A(H1)		
A(H3)		778
A(sub-typing not performed)		448
Influenza B		48
Other pathogen		6
Unknown		508
Total		**1835**

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.