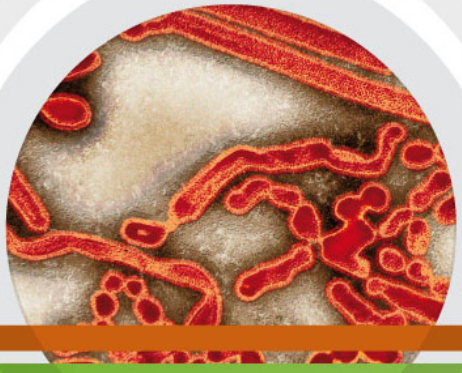


SURVEILLANCE REPORT

Fortnightly influenza surveillance overview

17 August 2012

Main surveillance developments in weeks 31–32, 2012 (30 Jul–12 Aug 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 appears on a fortnightly basis until week 40/2012.

- During weeks 31–32/2012, all countries reporting geographic spread experienced no activity of influenza-like illness/acute respiratory infection.
- Of 29 sentinel specimens, none tested 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 98.5% of sentinel influenza type A viruses subtyped during the 2011/12 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. This is consistent with the low vaccine effectiveness 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): During weeks 31–32/2012, all reporting countries experienced low-intensity influenza activity and decreasing or stable trends. For more information, **click here**.

Virological surveillance: Of 29 sentinel specimens, none tested positive for influenza virus. For more information, **click here**.

Hospital surveillance of severe acute respiratory infection (SARI): During weeks 31–32/2012, no SARI cases were reported. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

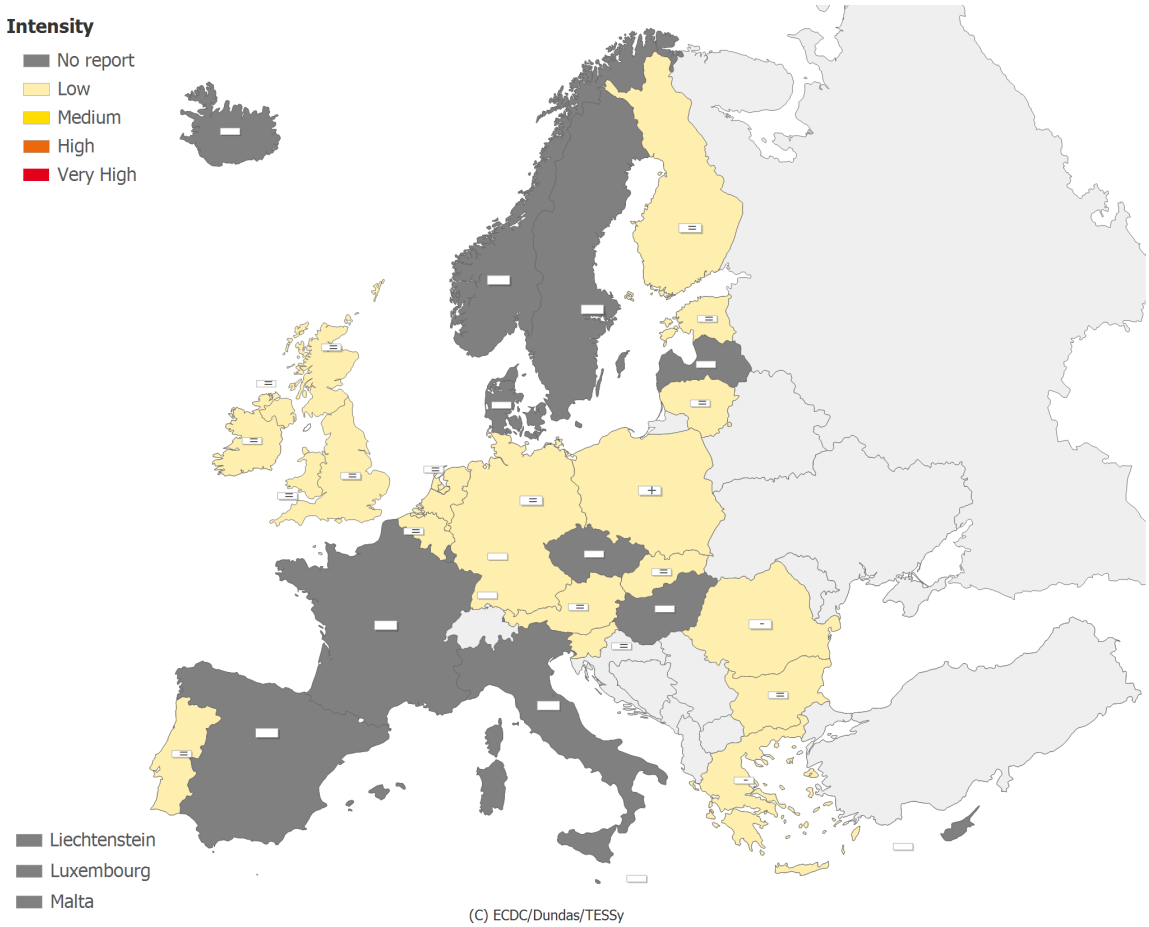
In weeks 31 and 32/2012, 17 countries reported clinical data. All reporting countries experienced low-intensity influenza activity during both weeks (Table 1, Map 1).

During both weeks, all countries reporting geographic spread indicated no activity.

During week 31, stable trends were reported by most countries, but Poland and Slovakia reported decreasing trends.

During week 32, stable trends were reported by most countries, but Greece and Romania reported decreasing trends.

Map 1: Intensity for weeks 31–32/2012



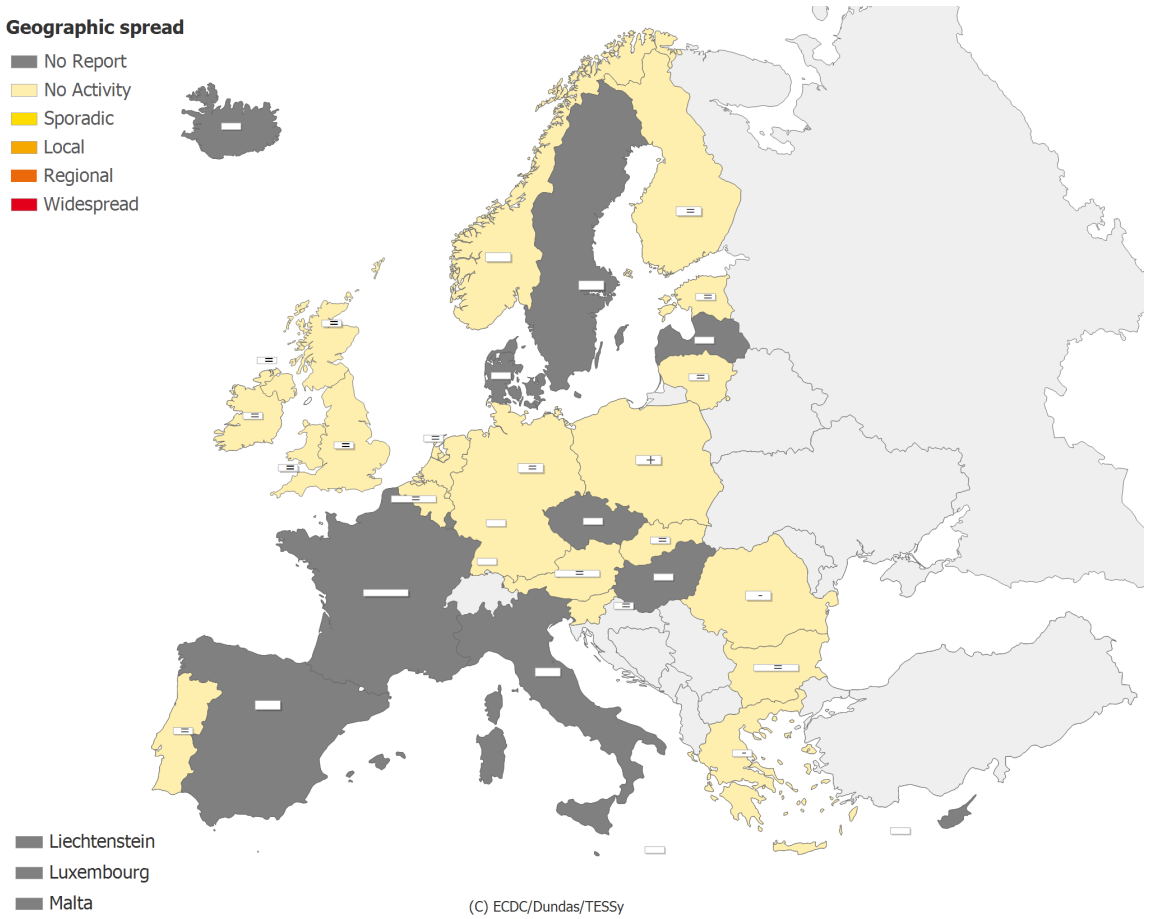
* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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 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 31–32/2012



* 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 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 31–32/2012

Country	Intensity	Geographic spread	Trend	No. of sentinel swabs	Dominant type	Percentage positive	ILI per 100 000	ARI per 100 000	Epidemiologic-al overview	Virological overview
Austria	Low	No activity	Stable	0	None	0.0	-	-	Graphs	Graphs
Belgium	Low	No activity	Stable	-	-	0.0	27.1	682.3	Graphs	Graphs
Bulgaria	Low	No activity	Stable	0	None	0.0	-	218.0	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	0.8	57.5	Graphs	Graphs
Finland	Low	No activity	Stable	15	None	0.0	-	-	Graphs	Graphs
France				-	-	0.0	-	-		
Germany	Low	No activity	Stable	2	None	0.0	-	438.9	Graphs	Graphs
Greece	Low	No activity	Decreasing	0	None	0.0	11.5	-	Graphs	Graphs
Hungary				-	-	0.0	-	-		
Iceland				0	-	0.0	-	-	Graphs	Graphs
Ireland	Low	No activity	Stable	2	None	0.0	1.9	-	Graphs	Graphs
Italy				-	-	0.0	-	-		
Latvia				-	-	0.0	-	-		
Lithuania	Low	No activity	Stable	1	None	0.0	0.0	107.2	Graphs	Graphs
Luxembourg				-	-	0.0	-	-		
Malta				-	-	0.0	-	-		
Netherlands	Low	No activity	Stable	4	None	0.0	14.0	-	Graphs	Graphs
Norway	Unknown (no information available)	No activity	Unknown (no information available)	1	None	0.0	-	-	Graphs	Graphs
Poland	Low	No activity	Increasing	0	None	0.0	9.7	-	Graphs	Graphs
Portugal	Low	No activity	Stable	0	None	0.0	0.0	-	Graphs	Graphs
Romania	Low	No activity	Decreasing	0	None	0.0	0.0	275.0	Graphs	Graphs
Slovakia	Low	No activity	Stable	0	None	0.0	32.0	497.5	Graphs	Graphs
Slovenia	Low	No activity	Stable	0	None	0.0	0.0	309.5	Graphs	Graphs
Spain				0	None	0.0	-	-	Graphs	Graphs
Sweden				0	-	0.0	-	-	Graphs	Graphs
UK - England	Low	No activity	Stable	3	None	0.0	1.8	239.1	Graphs	Graphs
UK - Northern Ireland	Low	No activity	Stable	0	-	0.0	3.0	203.2	Graphs	Graphs
UK - Scotland	Low	No activity	Stable	0	None	0.0	2.7	284.7	Graphs	Graphs
UK - Wales	Low	No activity	Stable	1	-	0.0	1.5	-	Graphs	Graphs
Europe				**29**		**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 only displays data for the most recently reported week of the two-week surveillance period. For the number of sentinel swabs, the table displays the total for both weeks and the percentage positive is calculated based on data for both weeks. 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 1–5% 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 31 and 32/2012, 17 countries reported virological data. Of 29 sentinel specimens tested, none was positive for influenza virus (Tables 1 and 2, Figure 1).

Of the 19 influenza viruses detected from non-sentinel sources during weeks 31–32/2012, six (31.6%) were type A and 13 (68.4%) were type B (Table 2). Of the 9 489 influenza virus detections in sentinel specimens since week 40/2011, 8 465 (89.2%) were type A and 1 024 (10.8%) were type B. Of the 7 802 sentinel influenza A viruses subtyped, 7 685 (98.5%) were A(H3) viruses and 117 (1.5%) were A(H1)pdm09 (Table 2, Figure 2). Of 191 sentinel influenza B viruses which were 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, 1 894 antigenic characterisations of viruses have been reported, of which 1 371 (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, 1 490 genetic characterisations of influenza viruses have been reported, 1 250 (83.9%) of which have been A(H3) viruses (Figure 5). Of the latter, 455 (36.4%) fell 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 serum 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 June report prepared by the Community Network of Reference Laboratories (CNRL) coordination team.

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 40/2011–32/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	0	6	8465	24516
A(H1)pdm09	0	0	117	323
A(H3)	0	0	7685	7864
A(sub-type unknown)	0	6	663	16329
Influenza B	0	13	1024	1545
B(Vic) lineage	0	0	115	81
B(Yam) lineage	0	1	76	88
Unknown lineage	0	12	833	1376
Total influenza	**0**	**19**	**9489**	**26061**

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 40/2011–32/2012

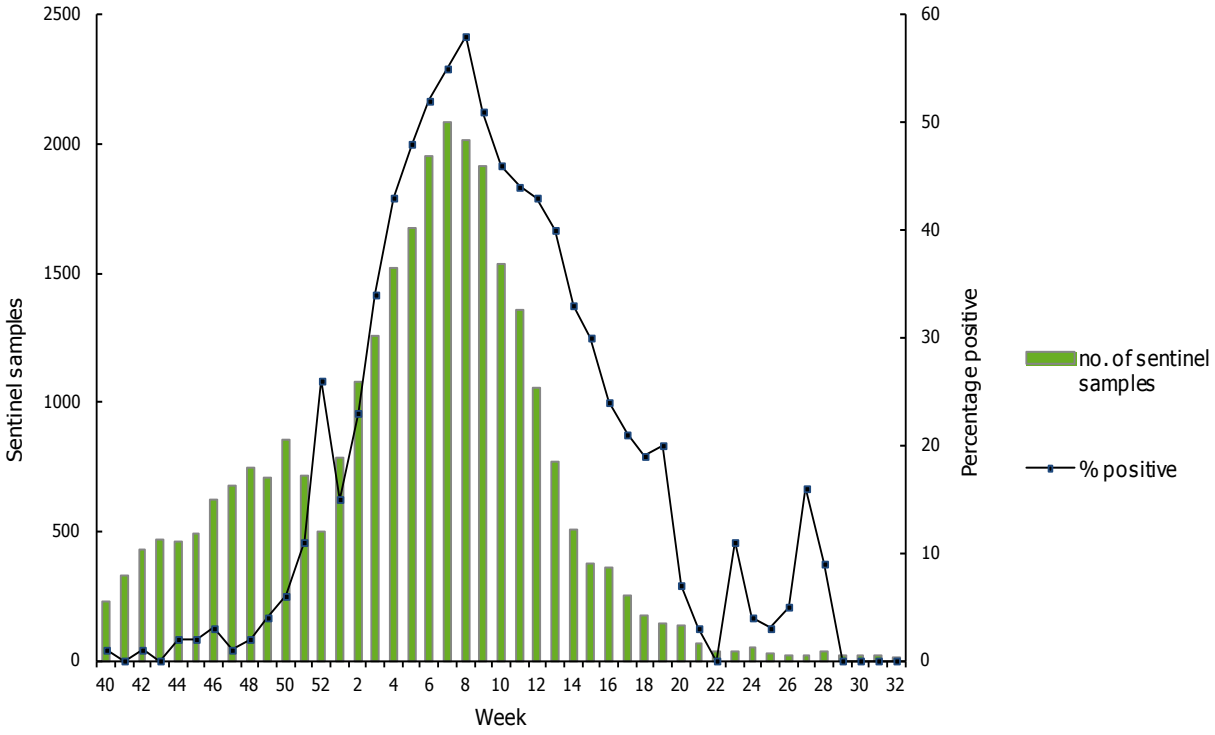


Figure 2: Number of sentinel specimens positive for influenza virus, by type, subtype and week of report, weeks 40/2011–32/2012

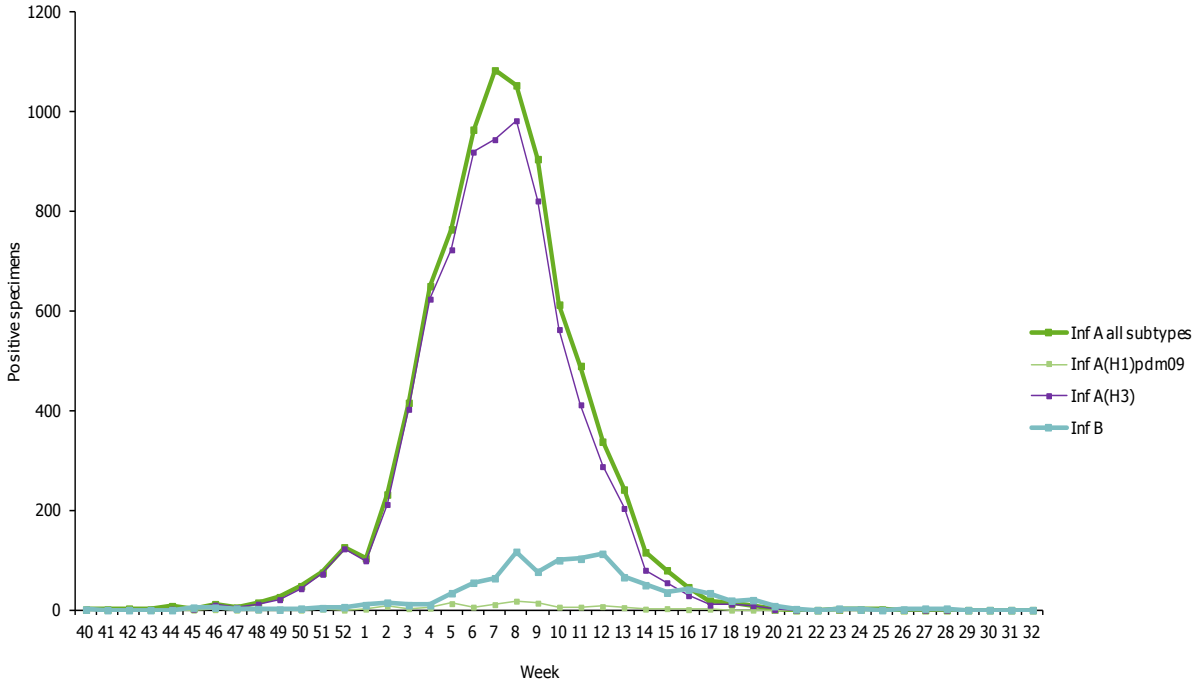


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2011–32/2012

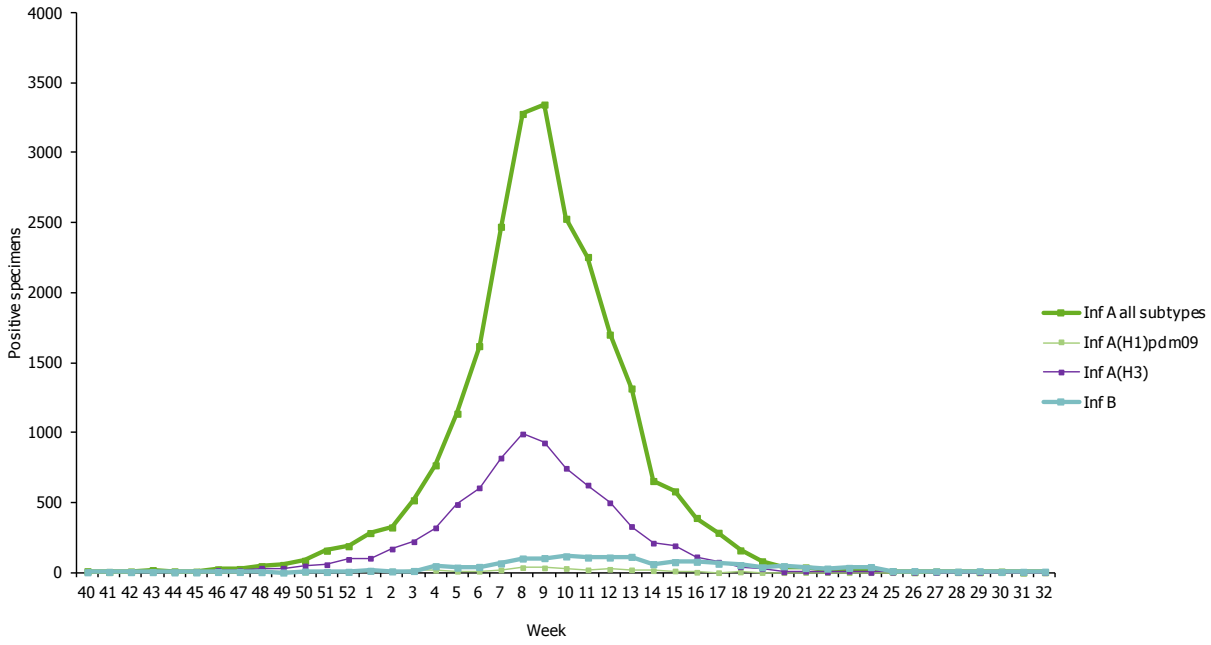


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–32/2012

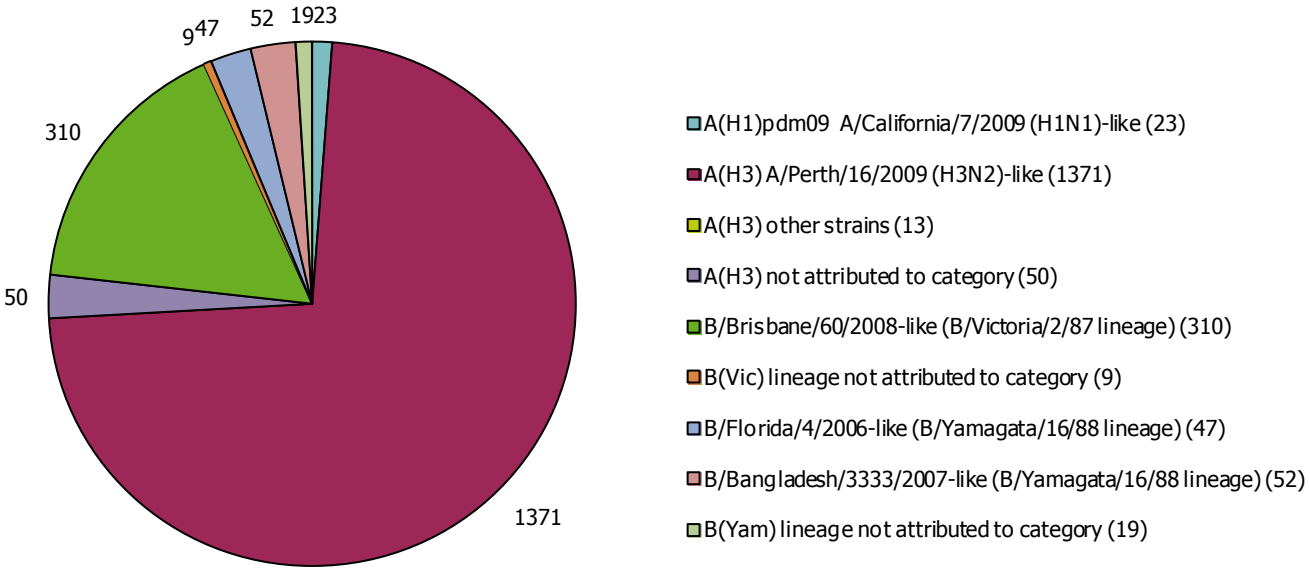


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–32/2012

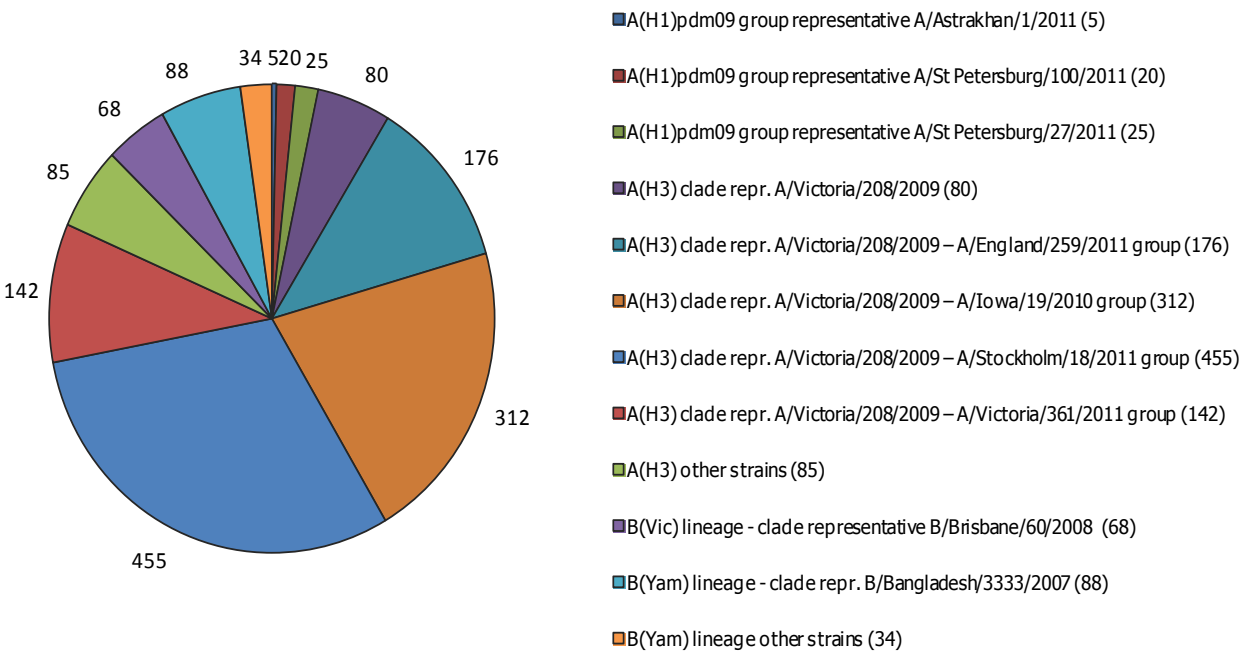


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2011–32/2012

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)	810	0	793	0	242	242 (100%)
A(H1N1)pdm2009	68	0	68	0	33	33 (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.

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 1 839 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 31–32/2012, no SARI cases were reported.

Since week 40/2011, 1 325 cases have been confirmed as being associated with influenza virus infection; of these, 1 276 (96.3%) were type A and 49 (3.7%) were type B. Of 851 subtyped influenza A viruses, 804 (94.5%) were A(H3) and 47 (5.5%) were A(H1)pdm09 (Table 6).

Table 4: Cumulative number of SARI cases, weeks 40/2011–32/2012

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	610		50		
United Kingdom	252	0.43			59255492
Total	**1839**		**113**		

Figure 6: Number of SARI cases by week of onset, weeks 40/2011–32/2012

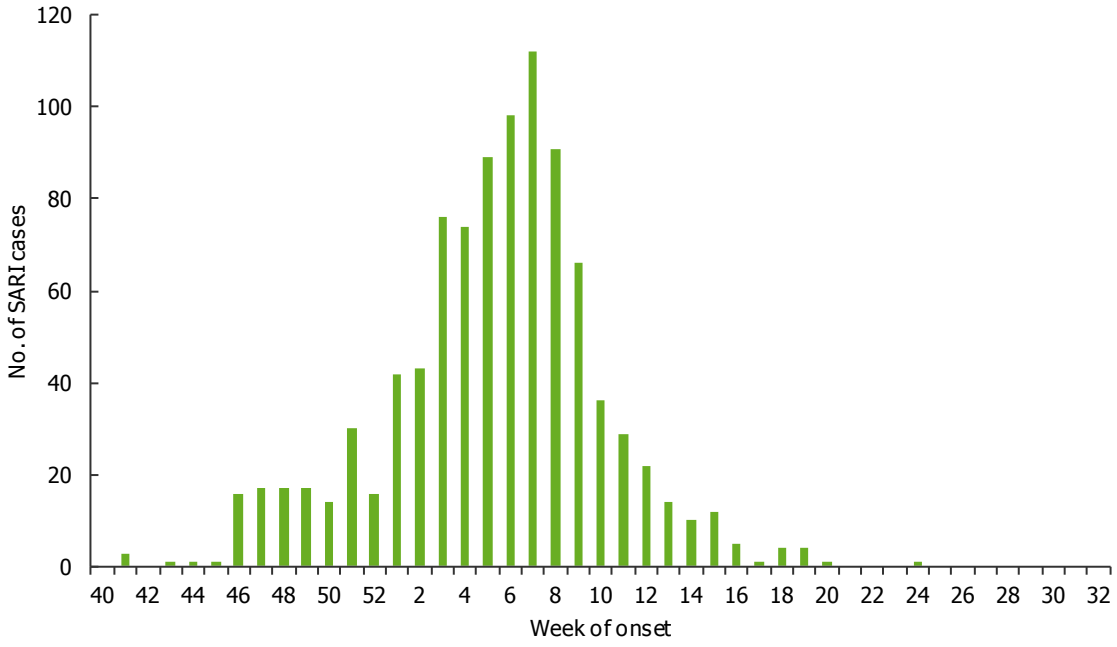


Table 5: Number of SARI cases by age and gender, weeks 40/2011–32/2012

Age groups	Male	Female	Unknown
Under 2	180	123	1
2-17	162	117	4
18-44	75	79	1
45-59	105	89	
>=60	333	304	2
Unknown	8	3	253
Total	863	715	261

Table 6: Number of SARI cases by influenza type and subtype and other pathogens, weeks 31–32/2012 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A		1276
A(H1)pdm09		47
A(H3)		804
A(sub-typing not performed)		425
Influenza B		49
Other pathogen		6
Unknown		508
Total		**1839**

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.