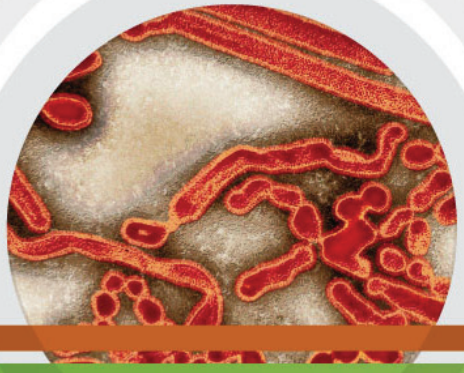


SURVEILLANCE REPORT

Fortnightly influenza surveillance overview

8 June 2012

Main surveillance developments in weeks 21–22/2012 (21 May–3 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 will be released on a fortnightly basis until week 40/2012.

- During weeks 21–22/2012, seventeen countries reported sporadic activity or no geographic spread. Decreasing or stable trends were reported by sixteen countries, reflecting off-season variation in influenza-like illness (ILI)/acute respiratory infection (ARI) consultation rates.
- Of 84 sentinel specimens, two were positive for influenza type B virus. Since week 40/2011, 89.2% of the influenza virus-positive specimens have been type A and 10.8% type B. The A(H3) subtype represented 98.7% of influenza A type viruses detected during the 2011–2012 season.
- One case of SARI of unknown aetiology was reported during weeks 21–22/2012.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): During weeks 21–22/2012, sixteen countries reported low intensity of influenza activity and decreasing or stable trends. For more information, **click here**.

Virological surveillance: Of 84 sentinel specimens tested, two (2.4%) were positive for type B influenza viruses, from each lineage, Victoria and Yamagata. For more information, **click here**.

Hospital surveillance of severe acute respiratory infection (SARI): During weeks 21–22/2012, one case of SARI of unknown aetiology was reported. For more information, **click here**.

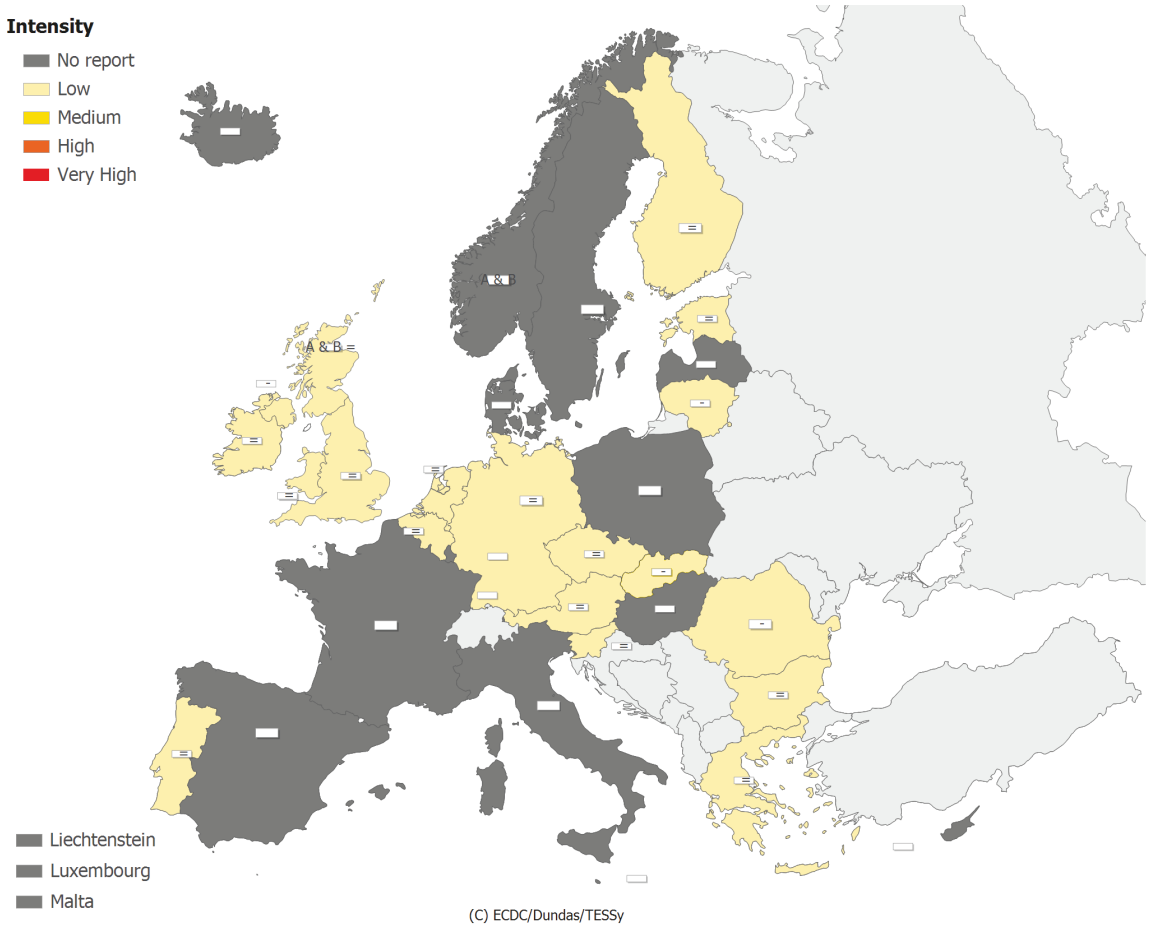
Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

During weeks 21–22/2012, sixteen countries reported low intensity of influenza activity.

Seventeen countries reported sporadic activity or no geographic spread. Decreasing or stable trends were reported by sixteen countries, reflecting off-season variation in influenza-like illness (ILI)/acute respiratory infection (ARI) consultation rates.

Map 1: Intensity for weeks 21–22/2012



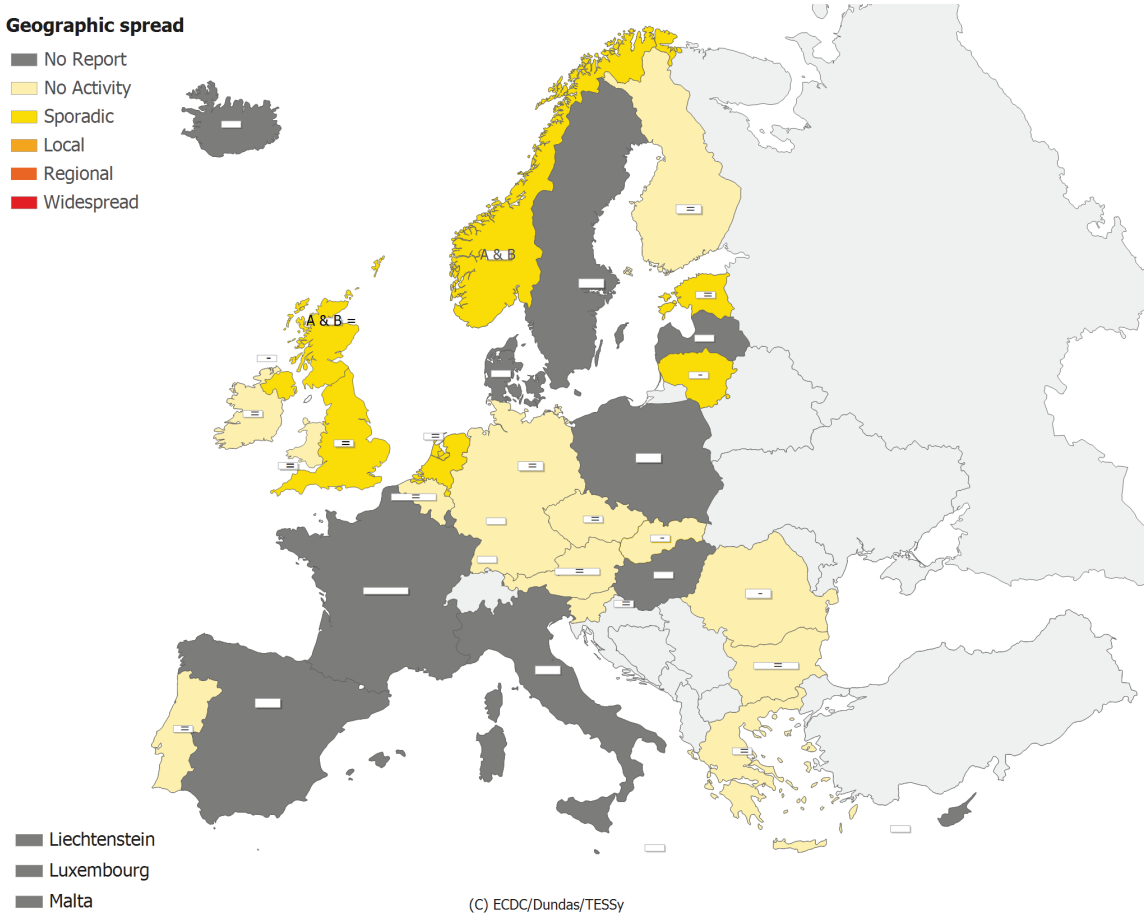
(C) ECDC/Dundas/TESSy

* 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 & B**	Type A and B
Very high	Particularly severe levels of influenza activity		

Map 2: Geographic spread for weeks 21–22/2012



* 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
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 & B	Type A and B

Table 1: Epidemiological and virological overview by country, weeks 21–22/2012

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	2	None	0.0	23.8	1239.5	Graphs	Graphs
Bulgaria	Low	No activity	Stable	0	None	0.0	-	349.4	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	No activity	Stable	-	-	0.0	12.4	585.8	Graphs	Graphs
Denmark				0	None	0.0	-	-	Graphs	Graphs
Estonia	Low	Sporadic	Stable	5	None	0.0	2.5	172.8	Graphs	Graphs
Finland	Low	No activity	Stable	23	None	0.0	-	-	Graphs	Graphs
France				-	-	0.0	-	-		
Germany	Low	No activity	Stable	10	None	10.0	-	577.9	Graphs	Graphs
Greece	Low	No activity	Stable	-	-	0.0	35.7	-	Graphs	Graphs
Hungary				-	-	0.0	-	-		
Iceland				0	-	0.0	-	-	Graphs	Graphs
Ireland	Low	No activity	Stable	6	None	0.0	2.0	-	Graphs	Graphs
Italy				-	-	0.0	-	-		
Latvia				0	None	0.0	-	-	Graphs	Graphs
Lithuania	Low	Sporadic	Decreasing	0	None	0.0	0.2	291.5	Graphs	Graphs
Luxembourg				-	-	0.0	-	-		
Malta				-	-	0.0	-	-		
Netherlands	Low	Sporadic	Stable	5	None	20.0	13.3	-	Graphs	Graphs
Norway	No information available	Sporadic	No information available	0	A & 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	Decreasing	6	None	0.0	0.4	504.7	Graphs	Graphs
Slovakia	Low	No activity	Decreasing	0	None	0.0	84.2	1052.2	Graphs	Graphs
Slovenia	Low	No activity	Stable	0	None	0.0	0.0	619.1	Graphs	Graphs
Spain				0	None	0.0	-	-	Graphs	Graphs
Sweden				-	-	0.0	-	-		
UK - England	Low	Sporadic	Stable	23	None	0.0	3.5	356.7	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Decreasing	3	-	0.0	8.2	317.7	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	-	A & B	0.0	6.3	406.3	Graphs	Graphs
UK - Wales	Low	No activity	Stable	1	-	0.0	3.8	-	Graphs	Graphs
Europe				**84**		**2.4**				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 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 21–22/2012, 19 countries reported virological data. Of 84 sentinel specimens tested, two (2.4%) were positive for influenza virus (Table 1, Figure 1). Both were type B viruses, one belonging to each lineage, Victoria and Yamagata (Table 2). Both the absolute number of influenza virus detections and the percentage of specimens positive for influenza virus have decreased continuously since week 9/2012 (Figures 1 and 2).

Of the 81 influenza viruses detected from sentinel and non-sentinel sources during weeks 21–22/2012, 39 (48.1%) were type A and 42 (51.9%) were type B (Table 2). Of the 9 238 influenza virus detections in sentinel specimens since week 40/2012, 8 238 (89.2%) were type A and 1 000 (10.8%) were type B. Of the 7 343 sentinel influenza A viruses subtyped, 7 245 (98.7%) were A(H3) viruses and 98 (1.3%) were A(H1)pdm09 (Table 2, Figure 2). The lineage of 187 sentinel influenza B viruses has been determined: 114 (61.0%) were of the B/Victoria/2/87 and 73 (39.0%) were of the B/Yamagata/16/88 lineage.

Since week 40/2011, 1 885 antigenic characterisations of viruses have been reported of which 1 367 (72.5%) 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, 1 539 genetic characterisations of influenza viruses have been reported, 1 290 (83.8%) of which have been A(H3) viruses. Of the latter, 424 (32.9 %) fell within the A/Victoria/208/2009 clade, genetic group 3 represented by A/Stockholm/18/2011 (Figure 5). 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 40/2011–22/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	0	39	8238	22833
A(H1)pdm09	0	0	98	303
A(H3)	0	10	7245	7189
A(sub-type unknown)	0	29	895	15340
Influenza B	2	40	1000	1279
B(Vic) lineage	1	1	114	79
B(Yam) lineage	1	0	73	81
Unknown lineage	0	39	813	1119
Total influenza	**2**	**79**	**9238**	**24112**

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 40/2011–22/2012

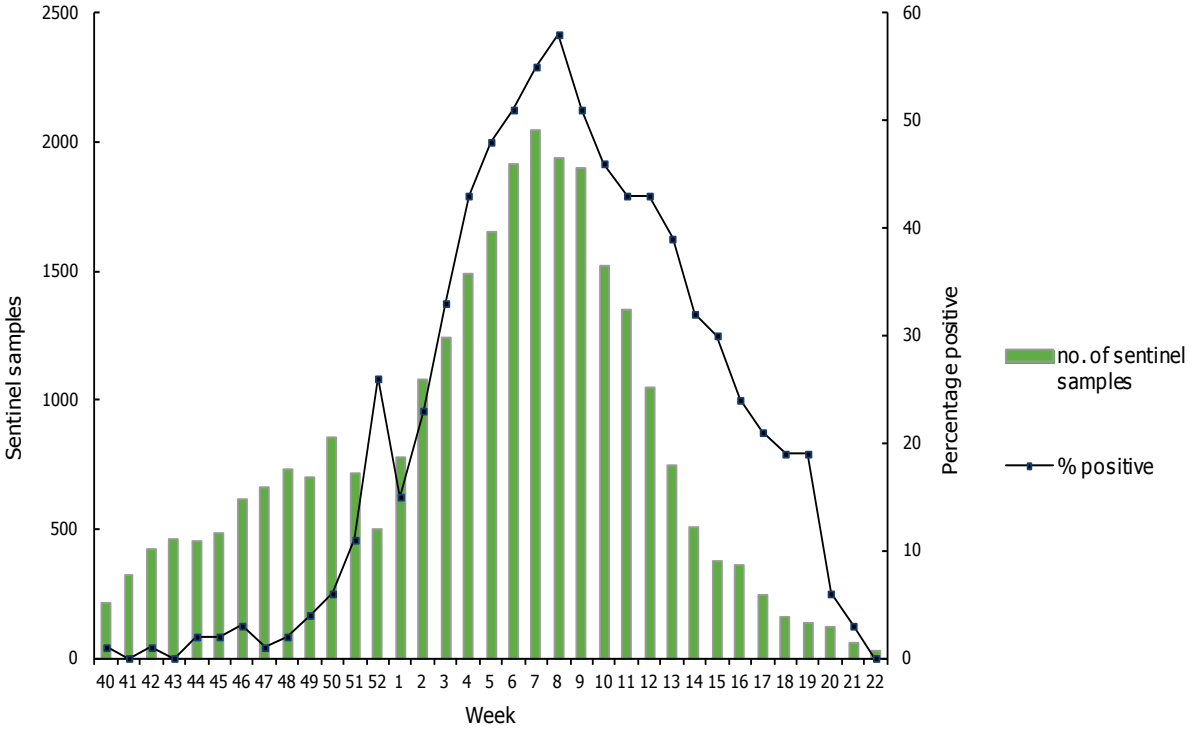


Figure 2: Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40/2011–22/2012

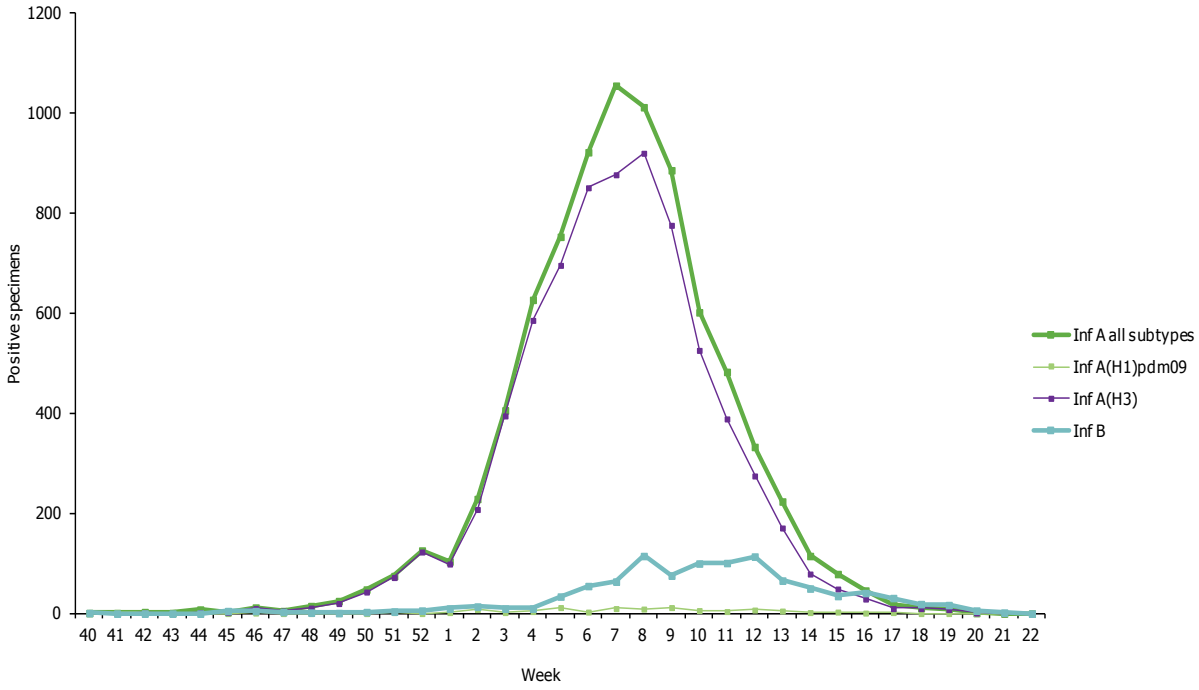


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2011–22/2012

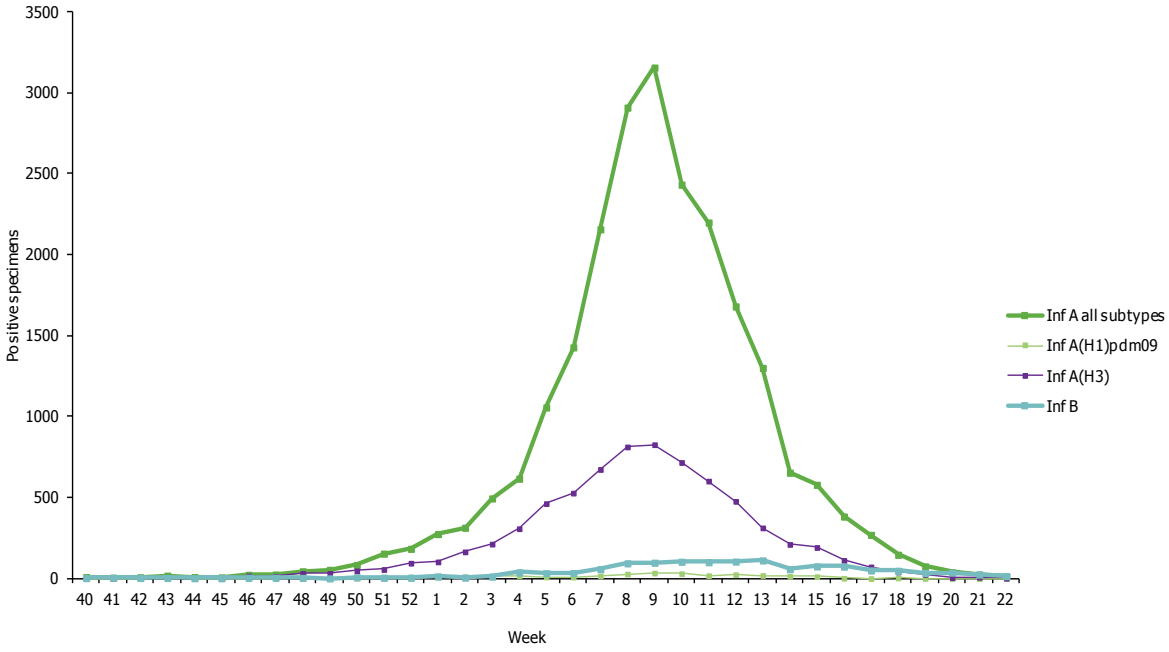


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–22/2012

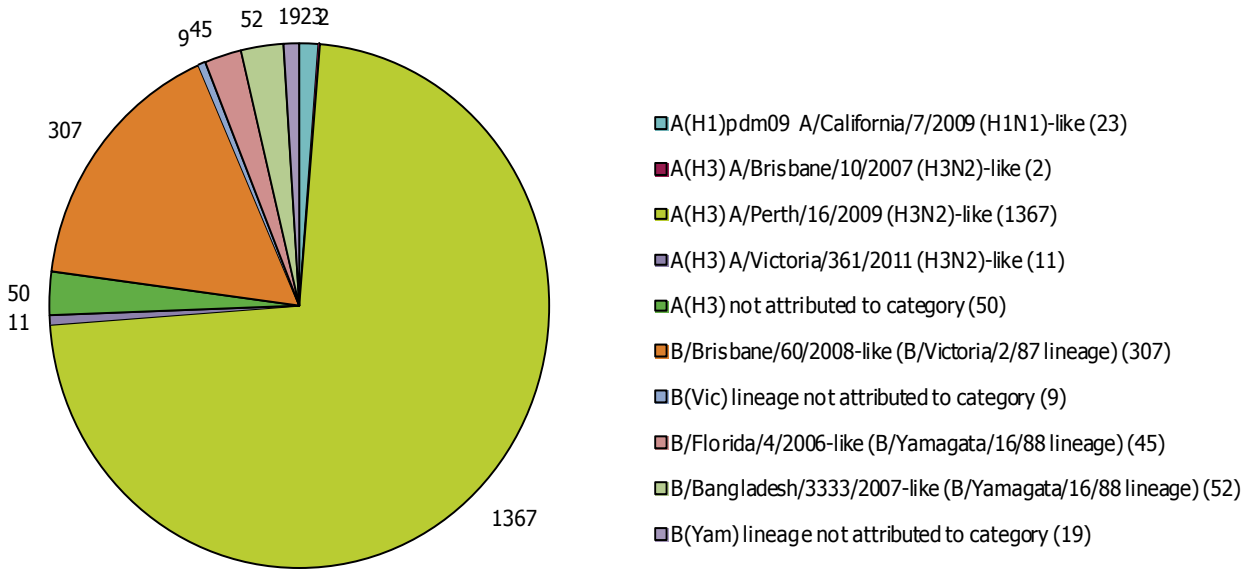


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–22/2012

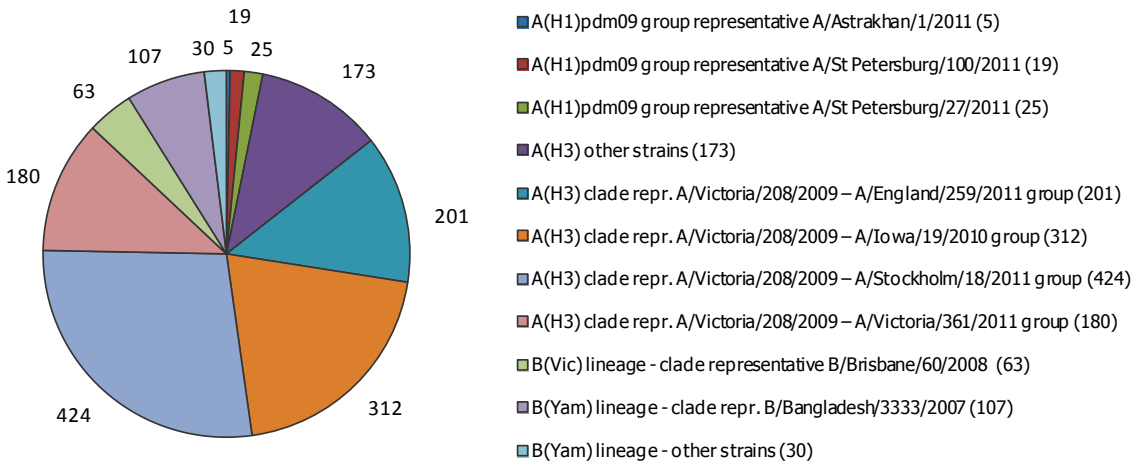


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2011–22/2012

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)	715	0	707	0	174	145 (100%)
A(H1N1)2009	54	0	54	0	7	7 (100%)
B	56	0	55	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.*

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 1 831 SARI cases, including 110 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 21–22/2012, one case of SARI of unknown aetiology was reported (Figure 7).

Since week 40/2011, 1 317 cases have been confirmed as being associated with influenza infection. Of 1 317 typed influenza viruses, 1 269 (94.5%) were type A and 48 (5.5%) were type B. Of 821 subtyped influenza A viruses, 774 (94.3%) were A(H3) and 47 (5.7%) were A(H1)pdm09 (Table 6).

Table 4: Cumulative number of SARI cases, weeks 40/2011–22/2012

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
Ireland	20		5		
France	310		43		
United Kingdom	252	0.43			59255492
Slovakia	29	0.53	1	0.02	5440078
Romania	346	5.95	6	0.1	5813728
Spain	602		47		
Belgium	272		8		
Total	**1831**		**110**		

Figure 7: Number of SARI cases by week of onset, weeks 40/2011–22/2012

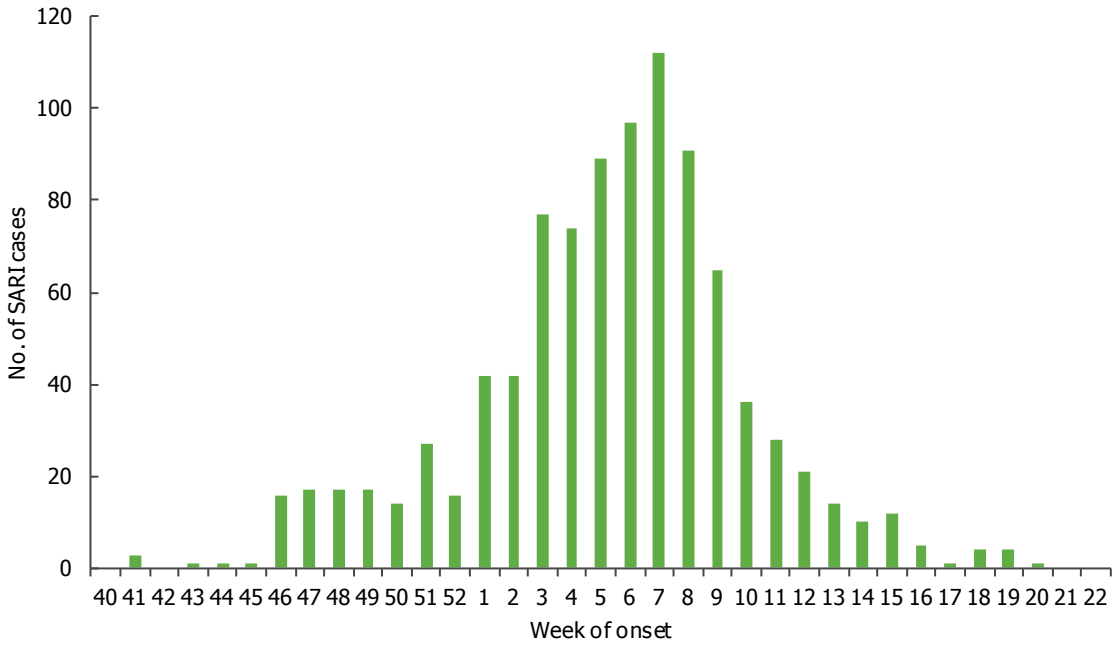


Table 5: Number of SARI cases by age and gender, weeks 40/2011–22/2012

Age groups	Male	Female	Unknown
Under 2	176	122	1
2-17	161	117	4
18-44	75	79	1
45-59	105	89	
>=60	331	304	2
Unknown	8	3	253
Total	**856**	**714**	**261**

Table 6: Number of SARI cases by influenza type and subtype and other pathogens, weeks 21–22/2012 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A		1269
A(H1)pdm09		47
A(H1)		
A(H3)		774
A(sub-typing not performed)		448
Influenza B		48
Other pathogen		6
Unknown	1	508
Total	**1**	**1831**

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.