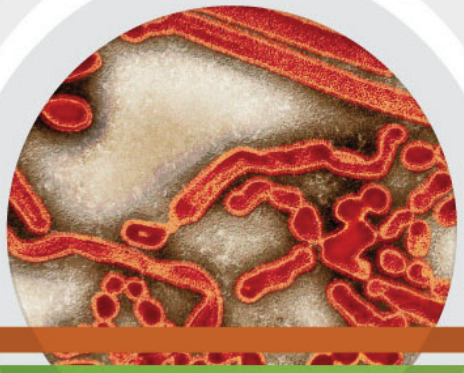


SURVEILLANCE REPORT

Weekly influenza surveillance overview

4 May 2012

Main surveillance developments in week 17/2012 (23–29 April 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 season started late and has had no clear progression, but is now approaching its end.

- In week 17, almost all reporting countries experienced low-intensity influenza activity and decreasing or stable trends.
- Of 162 sentinel specimens tested, 19.1% were positive for influenza virus, continuing the downward trend observed since week 8/2012. The proportion of B viruses continued to increase.
- The A(H3N2) influenza viruses examined at the WHO Collaborating Centre (WHO-CC) in London show increasing evidence of an imperfect match between the circulating viruses and the current relevant vaccine antigen. This supports the WHO and EMA recommendation to modify the trivalent vaccines for the 2012/2013 Northern Hemisphere season.
- One SARI case, unrelated to influenza, was reported by Slovakia.

The influenza season is drawing to a close and transmission is declining. However, although decreasing since week 9/2012, virological and epidemiological indicators of influenza activity show that influenza viruses are still circulating in some EU countries.

Sentinel surveillance of influenza-like illness (ILI)/acute respiratory infection (ARI): Apart from Slovakia which reported medium intensity, all reporting countries experienced low-intensity influenza activity. For more information, **click here**.

Virological surveillance: Of 162 sentinel specimens tested, 31 (19.1%) were positive for influenza virus. The absolute number of detected influenza viruses is decreasing, but the proportion of B viruses against A viruses continued to increase; the balance being now 64.5% vs. 35.5%. For more information, **click here**.

Hospital surveillance of severe acute respiratory infection (SARI): During week 17/2012, one SARI case, unrelated to influenza, was reported by Slovakia. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

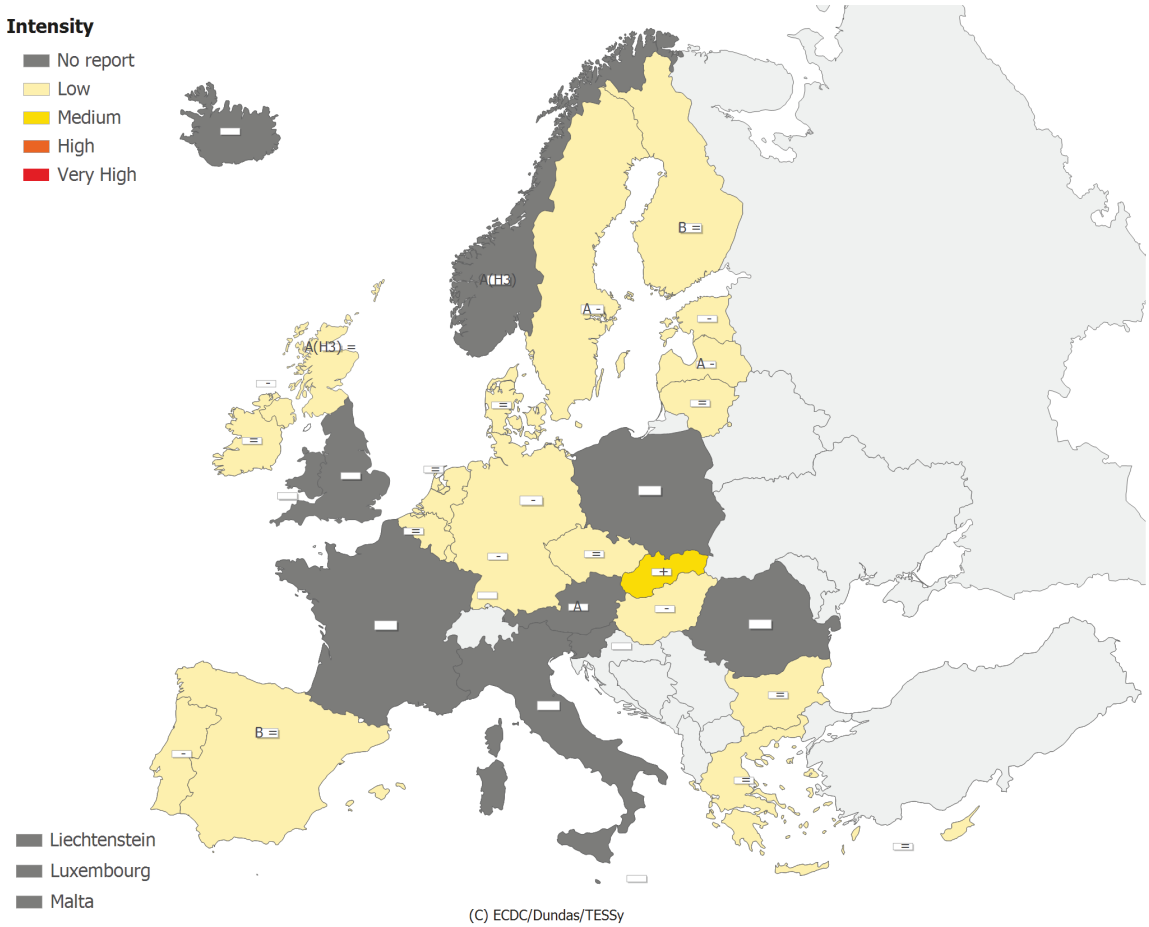
During week 17/2012, 20 countries, including the UK (Northern Ireland and Scotland), reported clinical data. Apart from Slovakia, which reported medium activity, all reporting countries experienced low-intensity influenza activity (Table 1, Map 1).

Geographic spread was reported as widespread by the Netherlands and as regional or local by five countries. Sporadic activity was observed by ten countries including the UK (Northern Ireland and Scotland). No geographic spread was reported by Bulgaria, Cyprus, Denmark and Portugal (Table 1, Map 2).

Stable trends in clinical activity were reported by 12 countries including the UK (Scotland) while an increasing trend was reported by Slovakia. A decreasing trend was reported by eight countries, including the UK (Northern Ireland) (Table 1, Map 2).

These fluctuations in clinical activity, nine weeks after the peak of influenza activity, are not unusual and probably reflect other causes of influenza-like illness or acute respiratory infection.

Map 1: Intensity for week 17/2012

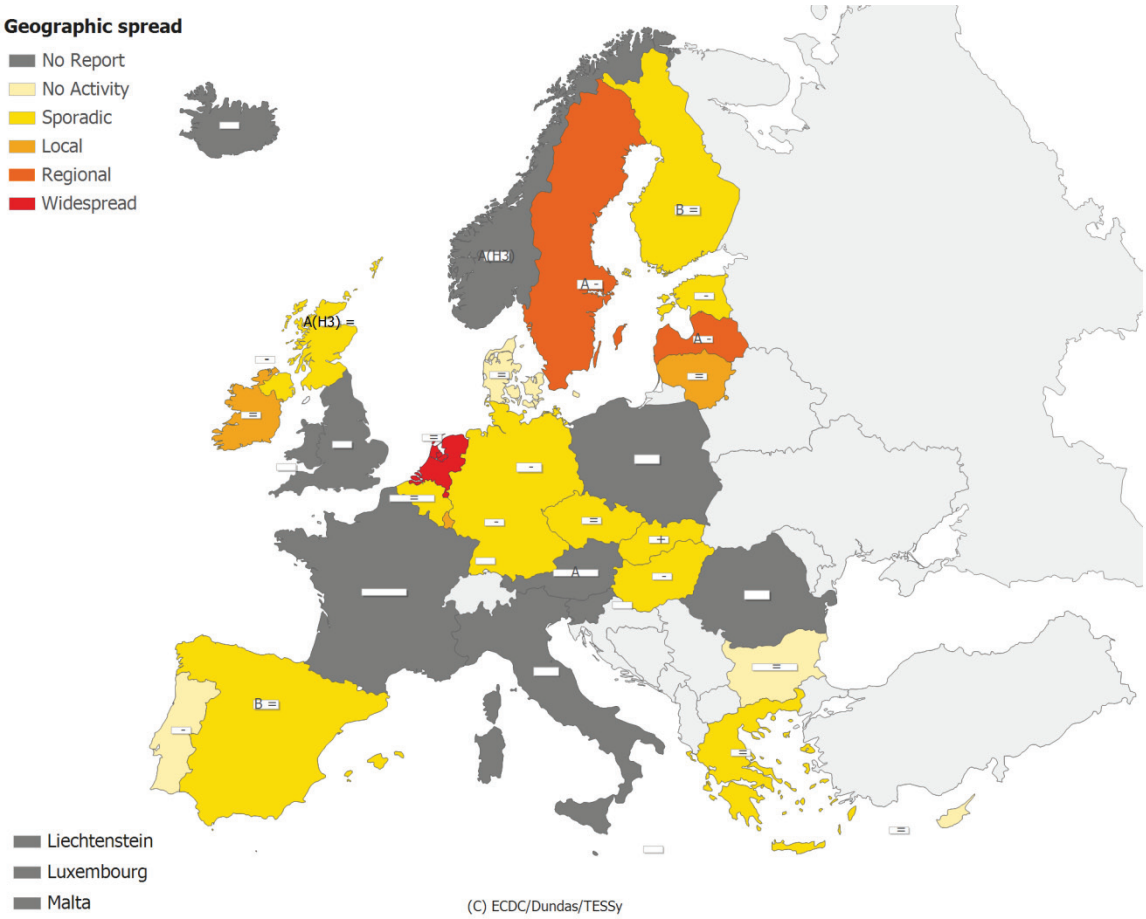


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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	**A**	Type A
Very high	Particularly severe levels of influenza activity	**A(H3)**	Type A, Subtype H3
		B	Type B

Map 2: Geographic spread for week 17/2012



* 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	Type A
A(H3)	Type A, Subtype H3
B	Type B

Table 1: Epidemiological and virological overview by country, week 17/2012

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				0	A	0.0	-	-	Graphs	Graphs
Belgium	Low	Sporadic	Stable	0	None	0.0	36.0	1592.6	Graphs	Graphs
Bulgaria	Low	No activity	Stable	0	None	0.0	-	484.7	Graphs	Graphs
Cyprus	Low	No activity	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic	Low	Sporadic	Stable	-	-	0.0	27.7	807.6	Graphs	Graphs
Denmark	Low	No activity	Stable	0	None	0.0	19.4	-	Graphs	Graphs
Estonia	Low	Sporadic	Decreasing	-	-	0.0	8.7	263.0	Graphs	Graphs
Finland	Low	Sporadic	Stable	14	B	42.9	-	-	Graphs	Graphs
France				27	-	18.5	-	-	Graphs	Graphs
Germany	Low	Sporadic	Decreasing	24	None	12.5	-	758.8	Graphs	Graphs
Greece	Low	Sporadic	Stable	0	None	0.0	26.6	-	Graphs	Graphs
Hungary	Low	Sporadic	Decreasing	6	None	33.3	20.9	-	Graphs	Graphs
Iceland				-	-	0.0	-	-		
Ireland	Low	Local	Stable	0	None	0.0	3.3	-	Graphs	Graphs
Italy				0	-	0.0	-	-	Graphs	Graphs
Latvia	Low	Regional	Decreasing	0	A	0.0	28.4	895.2	Graphs	Graphs
Lithuania	Low	Local	Stable	0	None	0.0	2.9	412.2	Graphs	Graphs
Luxembourg	Low	Local	Decreasing	6	None	16.7	-*	-*	Graphs	Graphs
Malta				-	-	0.0	-	-		
Netherlands	Low	Widespread	Stable	4	-	25.0	23.6	-	Graphs	Graphs
Norway				1	A(H3)	100.0	-	-	Graphs	Graphs
Poland				-	-	0.0	-	-		
Portugal	Low	No activity	Decreasing	0	None	0.0	0.0	-	Graphs	Graphs
Romania				-	-	0.0	-	-		
Slovakia	Medium	Sporadic	Increasing	2	None	0.0	151.3	1430.6	Graphs	Graphs
Slovenia				1	None	0.0	-	-	Graphs	Graphs
Spain	Low	Sporadic	Stable	41	B	26.8	10.3	-	Graphs	Graphs
Sweden	Low	Regional	Decreasing	6	A	0.0	4.0	-	Graphs	Graphs
UK - England				-	-	0.0	-	-		
UK - Northern Ireland	Low	Sporadic	Decreasing	7	-	14.3	11.6	323.8	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	23	A(H3)	0.0	10.2	454.4	Graphs	Graphs
UK - Wales				-	-	0.0	-	-		
Europe				**162**		**19.1**				**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

In week 17/2012, 20 countries, including the UK (Scotland), reported virological data. Of 162 sentinel specimens tested, 31 (19.1%) were positive for influenza virus (Table 1, Figure 1), of which 11 (35.5%) were type A and 20 (64.5%) were type B (Table 2). The proportion of B viruses continued to increase (34.1% in the previous week), although the absolute number of influenza A and B detections is decreasing. This is the ninth consecutive week with decreases in both the absolute number of influenza A and B detections and the proportion of influenza-positive sentinel specimens, indicating that the seasonal peak at EU/EEA level has passed.(Figure 1).

Of the 234 influenza viruses detected in sentinel and non-sentinel specimens in week 17/2012, 183 (78.2%) were type A, and 51 (21.8%) were type B viruses. Of 39 influenza A viruses subtyped, 38 (97.4%) were A(H3) viruses and one (2.6%) was an A(H1)pdm09 virus (Table 2, Figures 2 & 3).

Of the 32 280 influenza viruses detected in sentinel and non-sentinel specimens since week 40/2011, 30 263 (93.8%) were type A and 2 017 (6.2%) were type B. Of 14 266 influenza A viruses subtyped, 13 873 (97.2%) were A(H3) viruses and 393 (2.8%) were A(H1)pdm09 (Table 2, Figures 2 & 3). The lineage of 313 influenza B viruses has been determined: 182 (58.1%) were B-Victoria lineage and 131 (41.9%) were B-Yamagata lineage (Table 2).

Antigenic characterisations (Figure 4)? Since week 40/2012, 1 175 genetic characterisations of influenza viruses have been reported, 1 020 (86.8%) of which were A(H3) viruses. Of the latter, 658 (64.5%) fell within the A/Victoria/208/2009 clade, genetic group 3 represented by A/Stockholm /18/2011 (Figure 5). Viruses falling within this genetic group are antigenically diverse, and therefore, there is an imperfect match with the current vaccine 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 included the fact that many of the recently circulating A(H3N2) viruses yield low titres with post-infection ferret antisera, including that for the 2011/12 A/Perth/16/2009 vaccine virus. This is consistent with the WHO decision in February 2012 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.

The B/Victoria lineage has been slightly more prevalent, based on data reported to TESSy, while for specimens received at the WHO Collaborating Centre in London, the prevalent lineage has been B/Yamagata. This represents a considerable increase in the relative circulation of influenza B/Yamagata lineage viruses compared to previous seasons and influenced the WHO recommendation to move from a B/Victoria to a B/Yamagata lineage virus in trivalent vaccines for the Northern Hemisphere 2012–13 influenza season.

In terms of antiviral susceptibility, a total of 723 viruses have been tested and reported on by Denmark, Germany, Italy, the Netherlands, Norway, Portugal, Romania, Sweden and the United Kingdom. None of the A(H1N1)pdm09, A(H3N2) and B viruses tested against neuraminidase inhibitors showed resistance or reduced susceptibility. All A(H1N1)pdm09 and A(H3N2) viruses assessed for M2 blocker susceptibility were resistant.

In week 17/2012, 13 countries reported 113 respiratory syncytial virus detections, continuing the decline seen since the beginning of 2012 (Figure 6).

Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2011–17/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	11	172	8148	22115
A(H1)pdm09	1	0	96	297
A(H3)	7	31	7164	6709
A(sub-typing not performed)	3	141	888	15109
Influenza B	20	31	937	1080
B(Vic) lineage	1	1	112	70
B(Yam) lineage	0	0	70	61
Unknown lineage	19	30	755	949
Total influenza	**31**	**203**	**9085**	**23195**

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 40/2011–17/2012

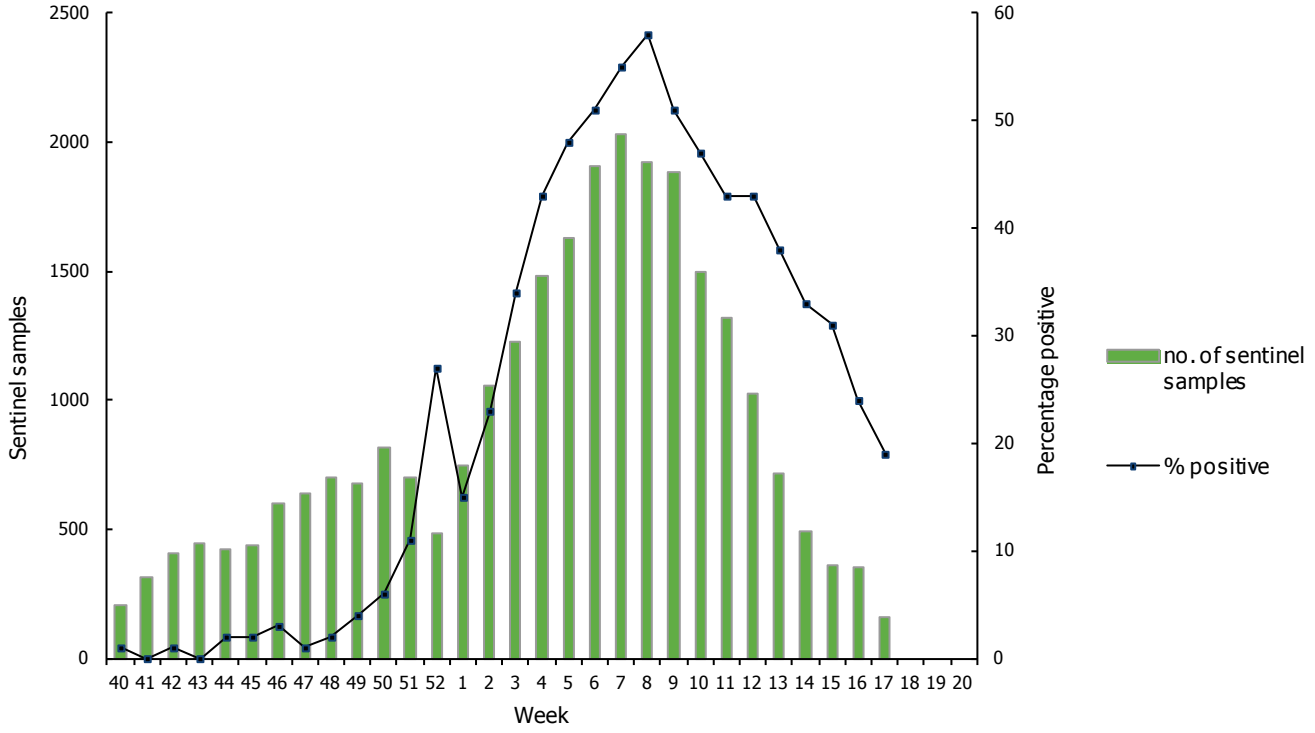


Figure 2: Number of sentinel specimens positive for influenza virus, by type, subtype and week of report, weeks 40/2011–17/2012

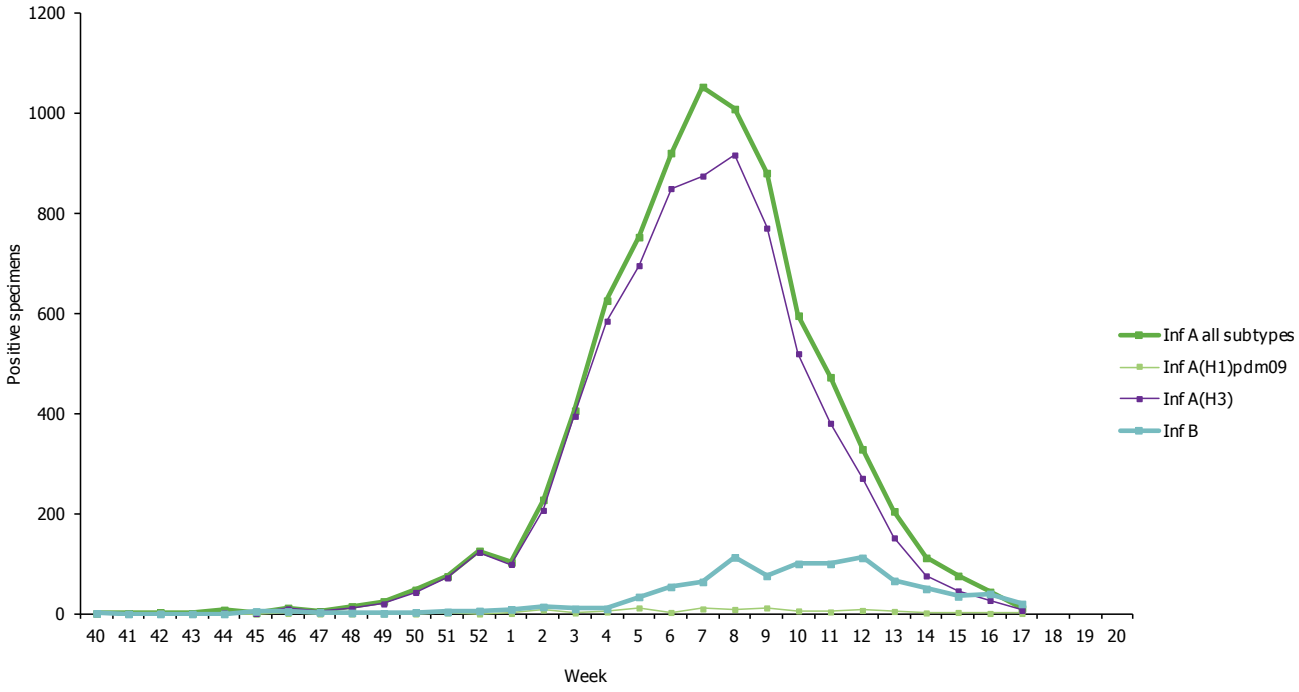


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2011–17/2012

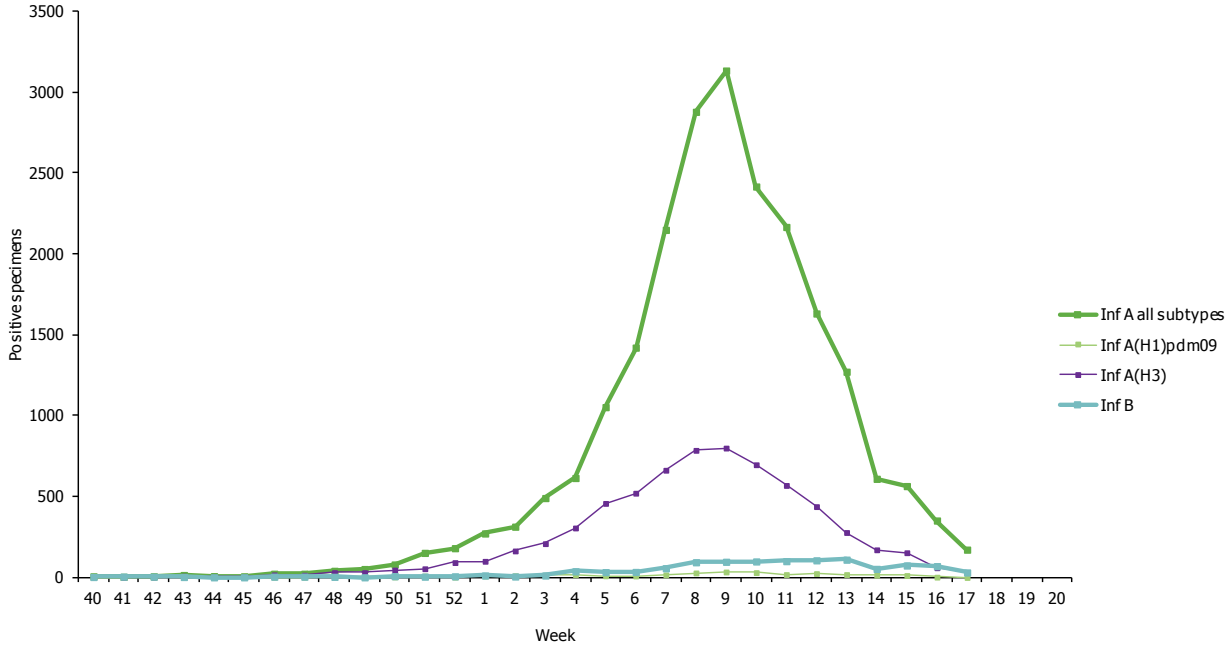


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–17/2012

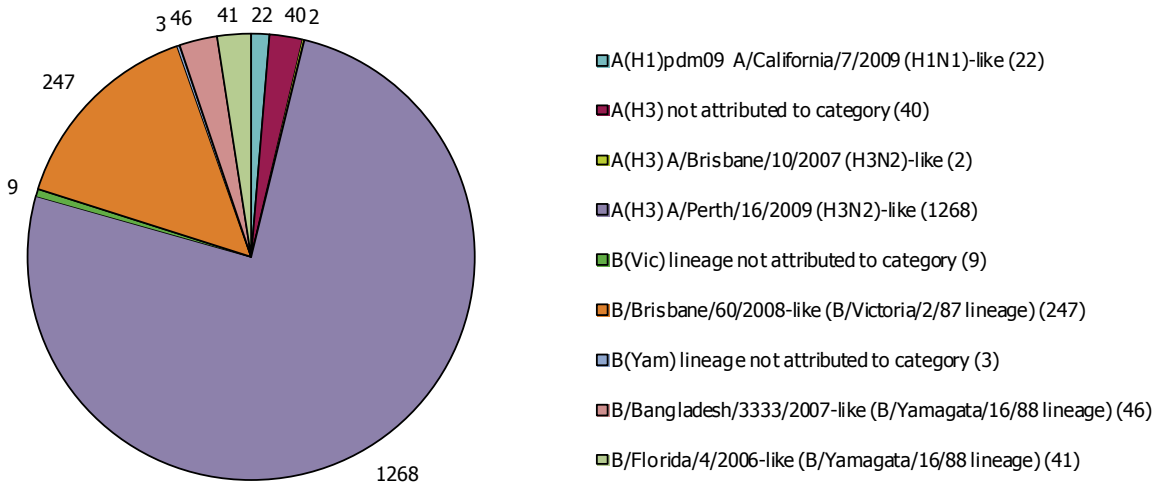


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–17/2012

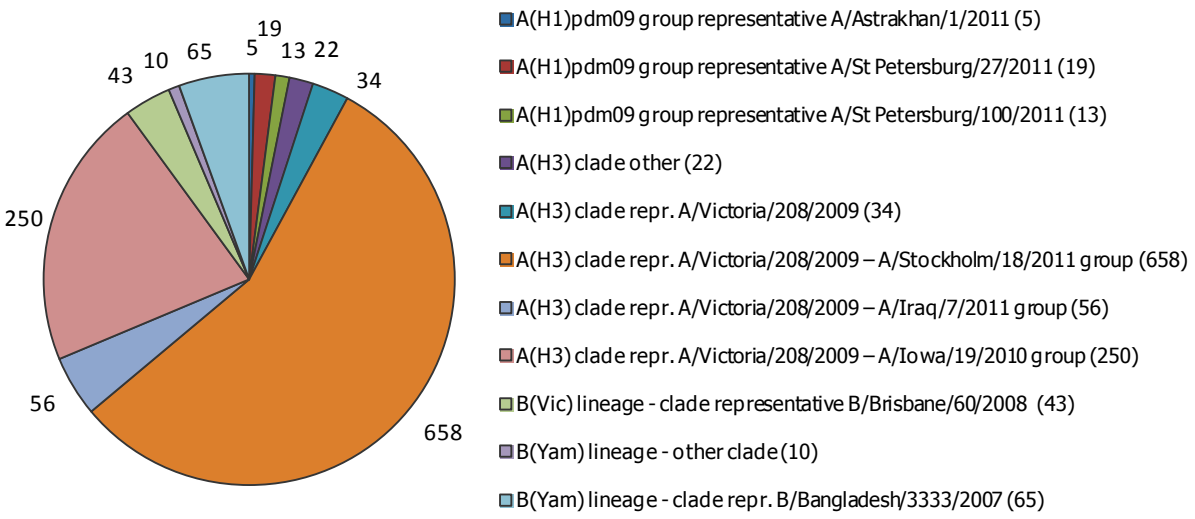
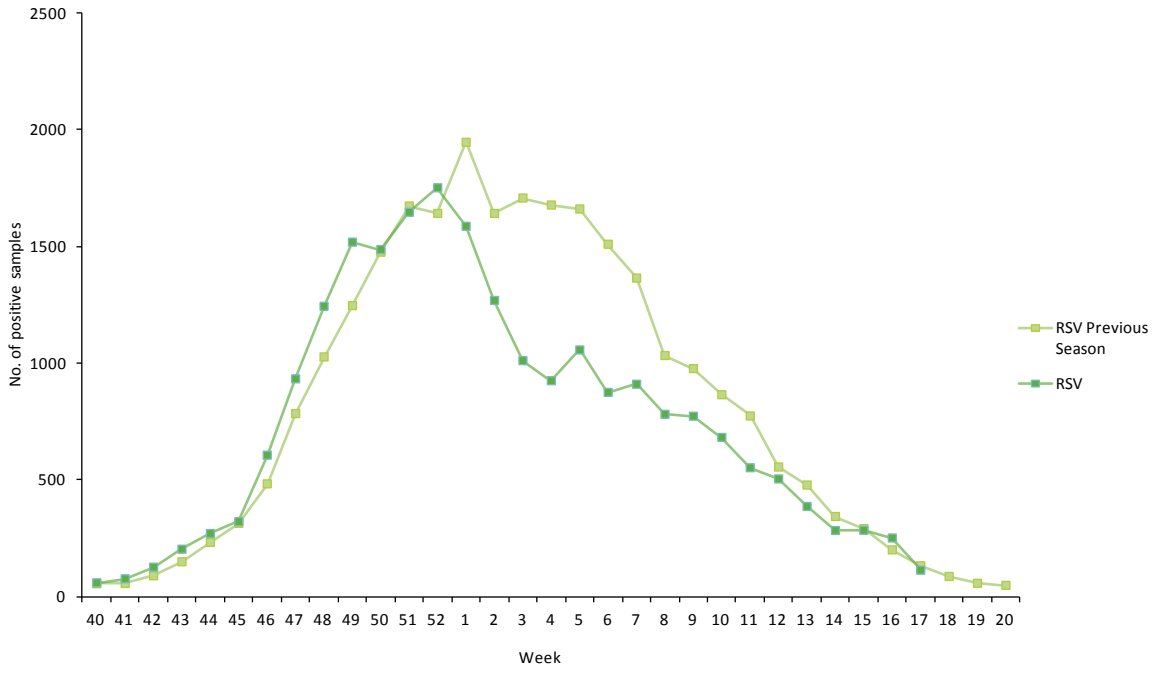


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2011–17/2012

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)	600	0	592	0	145	145 (100%)
A(H1N1)pdm09	38	0	38	0	7	7 (100%)
B	41	0	40	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.*

Figure 6: Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2011–17/2012



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 and SARI cases

Weekly analysis

Since week 40/2011, a total of 1 758 SARI cases and 108 fatalities has been reported to TESSy by seven countries (Table 4, Figure 7). For patients with available information, the male:female ratio was 1.2 (Table 5).

One SARI case was reported during week 17/2012 by Slovakia. The patient was an 85 year-old female whose cause of death was unknown.

Of the cases reported since week 40/2011, 1 254 have had an influenza virus infection confirmed. Of the 826 for which typing and subtyping has been performed, 737 were due to A(H3), 44 to A(H1)pdm09 and 45 to influenza B virus infections (Table 6).

Table 4: Cumulative number of SARI cases, weeks 40/2011–17/2012

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
Slovakia	28	0.51	1	0.02	5440078
Ireland	18		3		
France	310		43		
United Kingdom	194	0.33			59255492
Spain	600		47		
Belgium	272		8		
Romania	336	5.78	6	0.1	5813728
Total	**1758**		**108**		

Figure 7: Number of SARI cases by week of onset, weeks 40/2011–17/2012

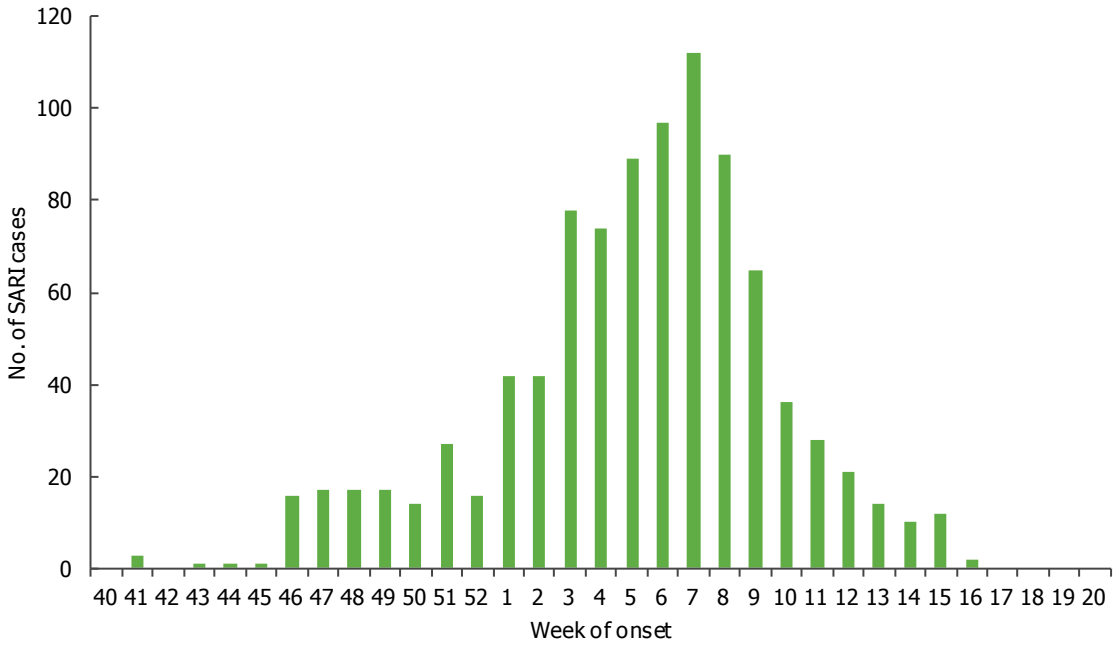


Table 5: Number of SARI cases by age and gender, weeks 40/2011–17/2012

Age groups	Male	Female	Unknown
Under 2	173	121	1
2-17	156	117	4
18-44	75	77	1
45-59	105	88	
>=60	328	304	2
Unknown	8	3	195
Total	**845**	**710**	**203**

Table 6: Number of SARI cases by influenza type and subtype and other pathogens, week 17/2012 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A		1209
A(H1)pdm09		44
A(H3)		737
A(sub-typing not performed)		428
Influenza B		45
Other pathogen		6
Unknown	1	498
Total	**1**	**1758**

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.