



SURVEILLANCE REPORT

Weekly influenza surveillance overview

25 May 2012

Main surveillance developments in week 20/2012 (14–20 May 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 in Europe has been unusual. It started late, had no geographical progression and has varied considerably in its overall impact from country to country. The features this week are:

- All reporting countries but Slovakia reported low intensity.
- Of 119 sentinel specimens tested by 22 countries, 6.7% were positive for influenza virus.
- Of 7 344 influenza A viruses subtyped in sentinel practices since week 40/2011, 98.7% were A(H3) viruses and 1.3% were A(H1)pdm09 viruses. The lineage of 185 sentinel B viruses has been determined: 61.1% were B-Victoria lineage and 38.9% were B-Yamagata lineage by detection.
- During week 20/2012, three cases of SARI or severe influenza were reported.

The 2011–2012 season is coming to its end. The season has been dominated by A(H3) viruses with no antiviral resistance. Among B viruses, both Victoria and Yamagata-lineage viruses have made a substantial contribution toward the end of the season, with the Victoria lineage dominating in some countries and the Yamagata lineage in others.

The weekly report will be replaced by a fortnightly report during the off-season period (weeks 21–39/2012). The weekly report will now be replaced by a fortnightly report during the off-season period (weeks 21–39/2012) so the next report will come out on 8 June (weeks 21 & 22). The new weekly surveillance season will start in week 40 on 1 October 2012, with first WISO published 12 October 2012.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Of the 23 reporting countries, 22 experienced low-intensity influenza activity. For more information, [click here](#).

Virological surveillance: Twenty-two countries reported virological data. Sentinel physicians collected 119 specimens, of which 6.7% were positive for influenza virus. For more information, [click here](#).

Hospital surveillance of severe acute respiratory infection (SARI): Since week 40/2011, seven countries have reported 1 829 SARI cases. For more information, [click here](#).

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

During week 20/2012, 23 countries reported clinical data. Twenty-two countries experienced low-intensity influenza activity and only Slovakia reported medium-intensity activity (Table 1, Map 1).

Geographic spread was reported as sporadic by 13 countries and regional by the Netherlands. Nine countries reported no activity (Table 1, Map 2). For the first time since week 4/2012, no country reported widespread activity.

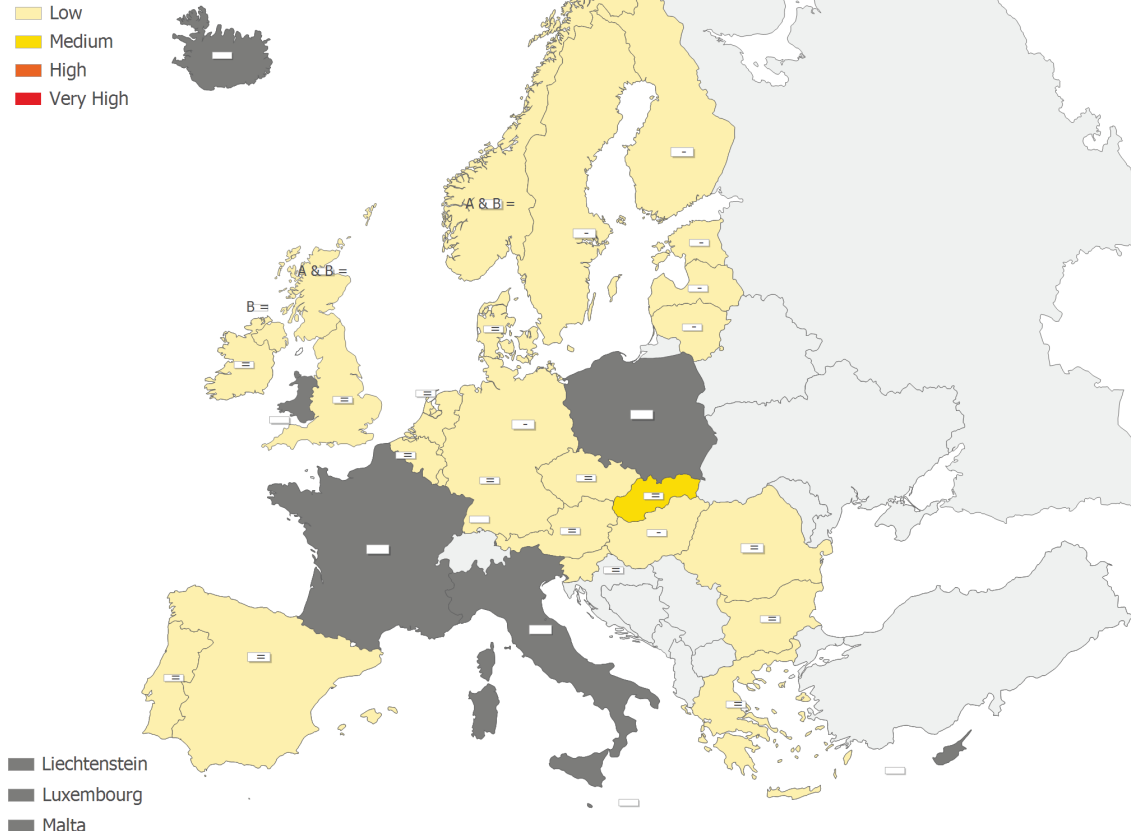
Stable trends were reported by 16 countries and decreasing trends by seven countries (Table 1, Map 2). Fourteen countries have reported stable or decreasing trends for at least three consecutive weeks (Table 1, Map 2).

This suggests that the 2011–2012 influenza season has ended, although sporadic influenza detections continue throughout Europe.

Map 1: Intensity for week 20/2012

Intensity

- No report
- Low
- Medium
- High
- Very High



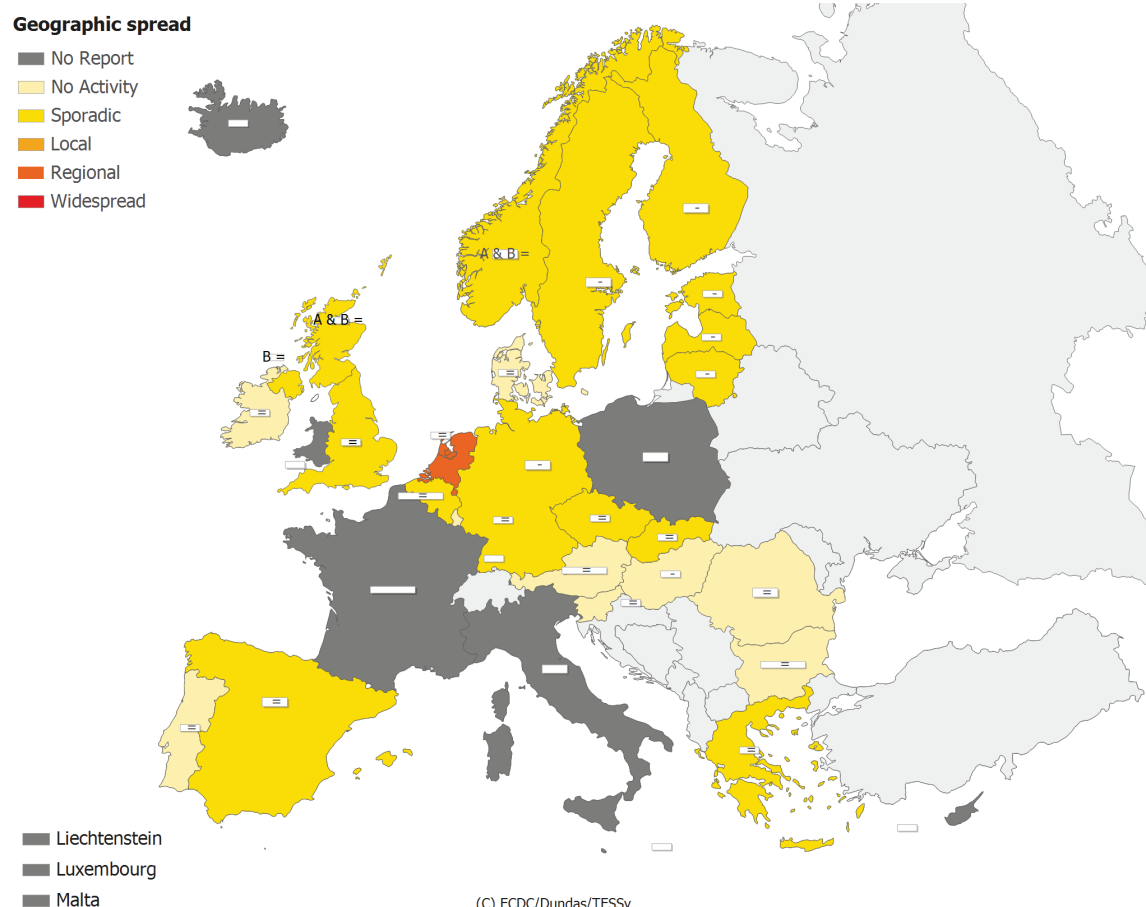
(C) ECDC/Dundas/TESSy

* 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	B	Type B

Map 2: Geographic spread for week 20/2012



(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	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)	A & B	Type A and B
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)	B	Type B
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)		

Table 1: Epidemiological and virological overview by country, week 20/2012

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	Sporadic	Stable	1	-	0.0	25.2	1480.2	Graphs	Graphs
Bulgaria	Low	No activity	Stable	0	None	0.0	-	436.0	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	Sporadic	Stable	-	-	0.0	13.8	614.9	Graphs	Graphs
Denmark	Low	No activity	Stable	1	None	0.0	11.9	-	Graphs	Graphs
Estonia	Low	Sporadic	Decreasing	3	None	0.0	2.6	168.9	Graphs	Graphs
Finland	Low	Sporadic	Decreasing	17	None	5.9	-	-	Graphs	Graphs
France				-	-	0.0	-	-		
Germany	Low	Sporadic	Decreasing	12	None	0.0	-	519.3	Graphs	Graphs
Greece	Low	Sporadic	Stable	2	-	0.0	24.7	-	Graphs	Graphs
Hungary	Low	No activity	Decreasing	5	None	0.0	9.3	-	Graphs	Graphs
Iceland				-	-	0.0	-	-		
Ireland	Low	No activity	Stable	1	None	0.0	4.5	-	Graphs	Graphs
Italy				-	-	0.0	-	-		
Latvia	Low	Sporadic	Decreasing	0	None	0.0	0.0	676.5	Graphs	Graphs
Lithuania	Low	Sporadic	Decreasing	0	None	0.0	0.4	345.9	Graphs	Graphs
Luxembourg	Low	No activity	Stable	2	None	0.0	-*	-*	Graphs	Graphs
Malta				-	-	0.0	-	-		
Netherlands	Low	Regional	Stable	2	None	50.0	24.6	-	Graphs	Graphs
Norway	Low	Sporadic	Stable	2	A & B	50.0	15.5	-	Graphs	Graphs
Poland				-	-	0.0	-	-		
Portugal	Low	No activity	Stable	0	None	0.0	0.0	-	Graphs	Graphs
Romania	Low	No activity	Stable	8	None	0.0	1.0	495.1	Graphs	Graphs
Slovakia	Medium	Sporadic	Stable	0	None	0.0	94.4	1097.4	Graphs	Graphs
Slovenia	Low	No activity	Stable	1	None	0.0	0.0	476.7	Graphs	Graphs
Spain	Low	Sporadic	Stable	26	None	15.4	5.9	-	Graphs	Graphs
Sweden	Low	Sporadic	Decreasing	2	None	0.0	0.9	-	Graphs	Graphs
UK - England	Low	Sporadic	Stable	21	None	4.8	7.2	380.0	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Stable	3	B	0.0	9.6	320.3	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	10	A & B	0.0	6.1	458.7	Graphs	Graphs
UK - Wales				-	-	0.0	-	-		
Europe				119		6.7				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 20/2012, 22 countries reported virological data. Of 119 sentinel specimens tested, 8 (6.7%) were positive for influenza virus (Table 1, Figure 1), of which two (25%) were type A and 6 (75%) type B (Table 2). Both the absolute number of influenza virus detections and the percentage of specimens positive for influenza virus have decreased for 12 weeks, indicating that the influenza season has ended in Europe.

Of the 77 influenza viruses detected from sentinel and non-sentinel sources during week 20/2012, 39 (50.6%) were type A and 38 (49.4%) were type B (Table 2).

Of the 9 235 influenza virus detections in sentinel specimens since week 40/2011, 8 239 (89.2%) were type A and 996 (10.8%) were type B viruses. Of 7 344 influenza A viruses subtyped, 7 246 (98.7%) were A(H3) viruses and 98 (1.3%) were A(H1)pdm09 (Table 2, Figures 2). The lineage of 185 influenza B viruses has been determined: 113 (61.1%) were B-Victoria and 72 (38.9%) were B-Yamagata lineage (Table 2).

Since week 40/2011, 1 796 antigenic characterisations of viruses have been reported, of which 1 335 (74.3%) were A/Perth/16/2009 (H3N2)-like (Figure 4). Sixty-eight viruses have been reported without category: 40 A(H3), 19 B(Yamagata-lineage) and 9 B(Victoria-lineage) viruses, reflecting changes in the reference viruses towards the end of the season and the need for an update of the reporting categories which is now available.

Since week 40/2011, 1 385 genetic characterisations of viruses have been reported, 1 177 (85.0%) of which were A(H3) viruses. Of the latter, 684 (58.1%) 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 virus, 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 the 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. Influenza B viruses of both the B/Victoria/2/87 and B/Yamagata/16/88 lineages have been detected this season.

Since week 40/2011, a total of 855 viruses have been tested for antiviral susceptibility and reported 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 for susceptibility to neuraminidase inhibitors showed resistance or reduced susceptibility. All A(H1N1)pdm09 and A(H3N2) viruses tested for M2 blocker susceptibility were resistant (Table 3).

In week 20/2012, 22 countries reported 70 respiratory syncytial virus (RSV) detections (Figure 6). Since week 52/2011, the number of RSV detections has decreased continuously.

Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2011–20/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	2	37	8239	22786
A(H1)pdm09	0	0	98	301
A(H3)	2	3	7246	7128
A(sub-typing not performed)	0	34	895	15356
Influenza B	6	32	996	1234
B(Vic) lineage	0	0	113	77
B(Yam) lineage	0	0	72	78
Unknown lineage	6	32	811	1079
Total influenza	8	69	9235	24020

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 40/2011–20/2012

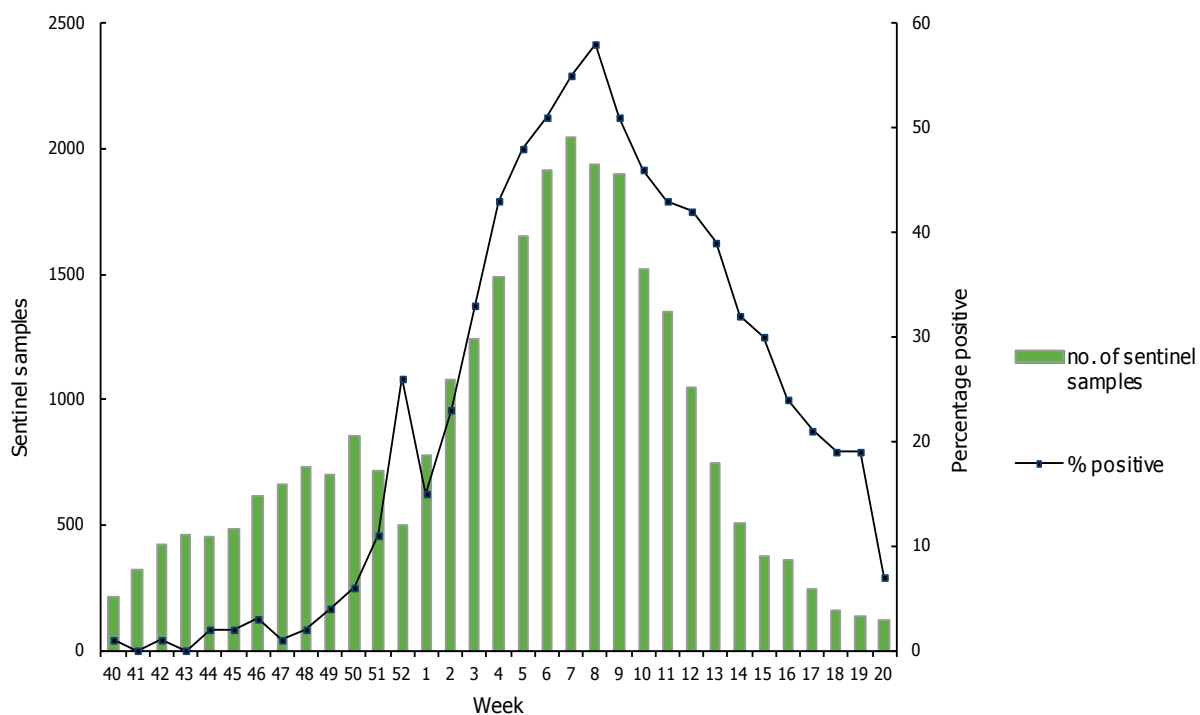


Figure 2: Number of sentinel specimens positive for influenza virus, by type, sub-type and week of report, weeks 40/2011–20/2012

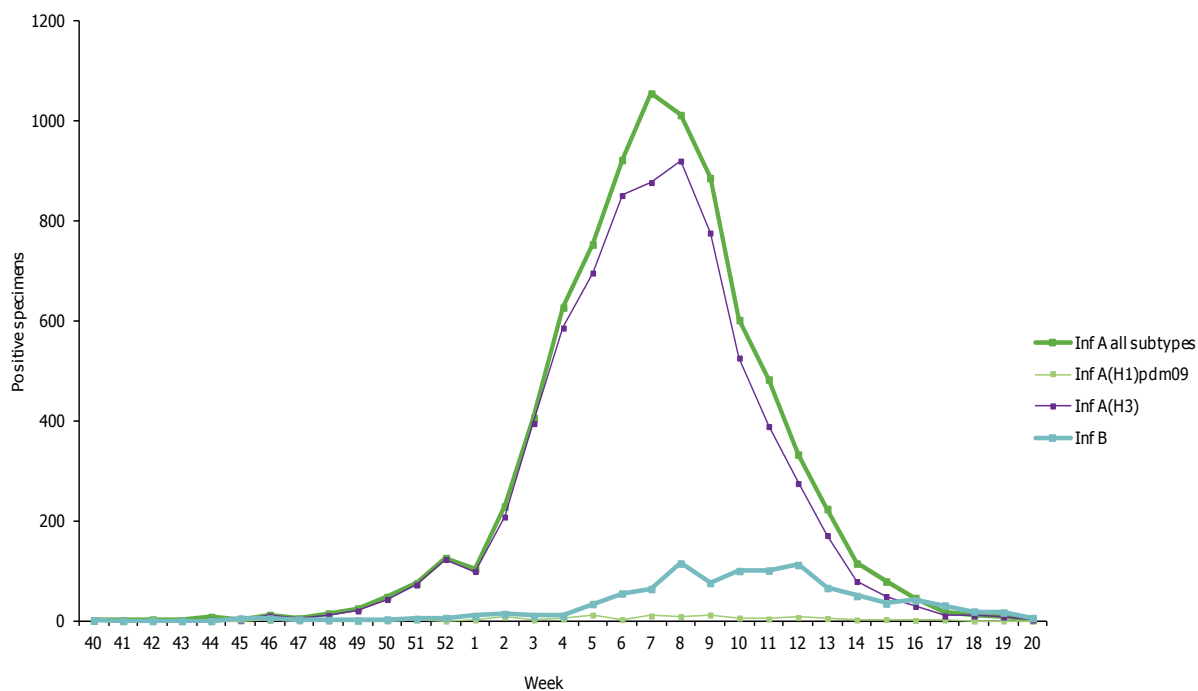


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2011–20/2012

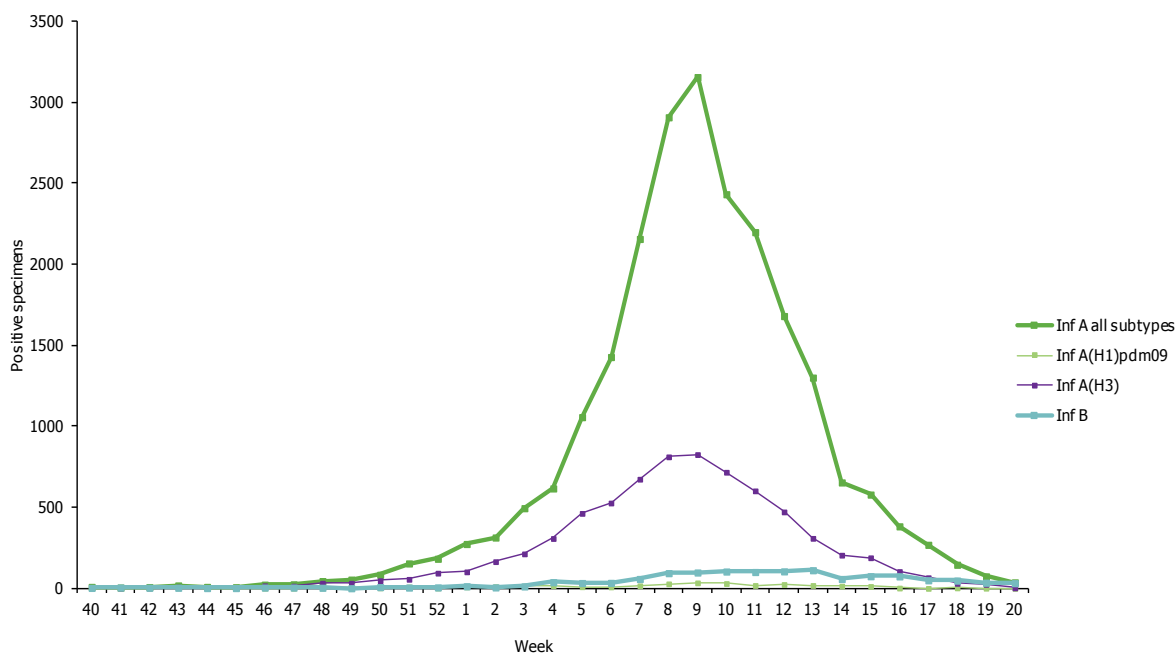


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–20/2012

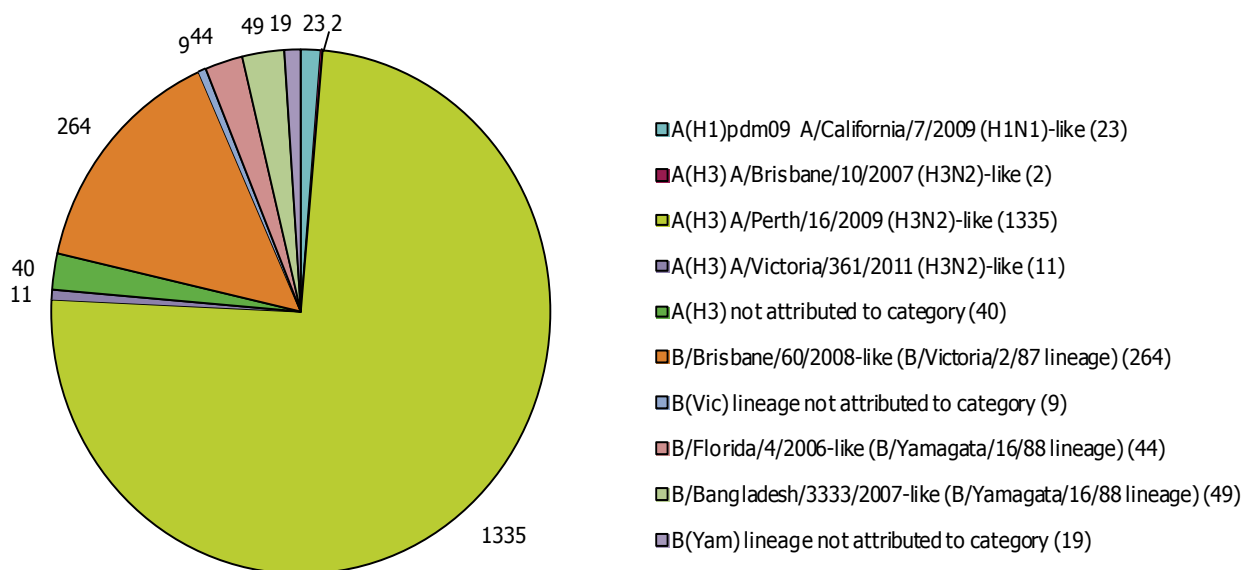


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–20/2012

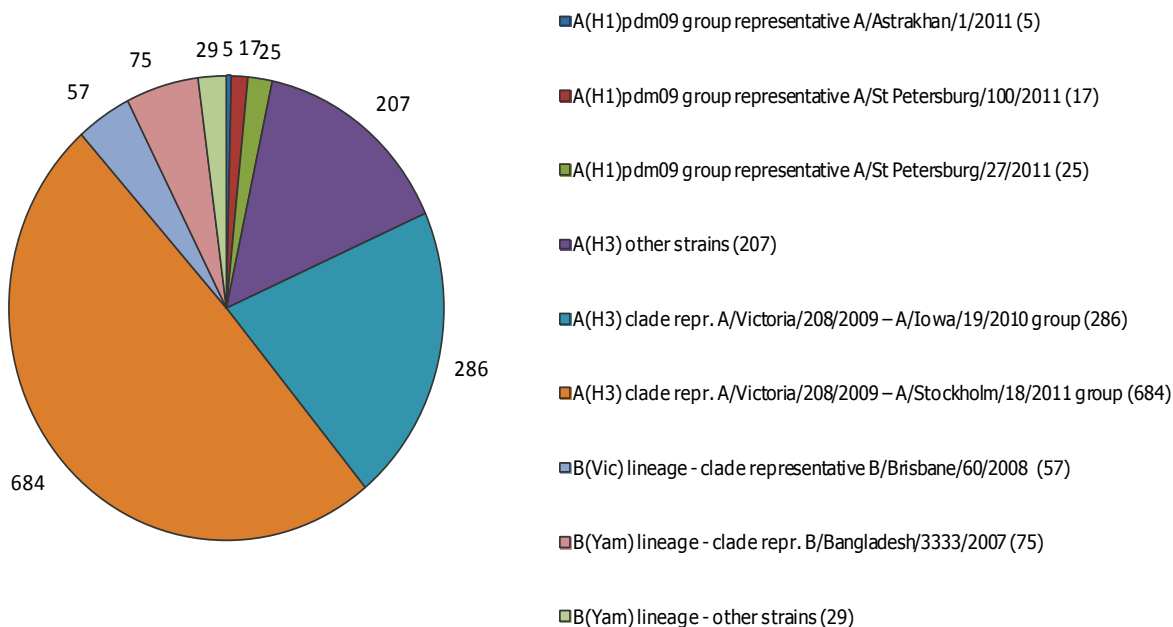
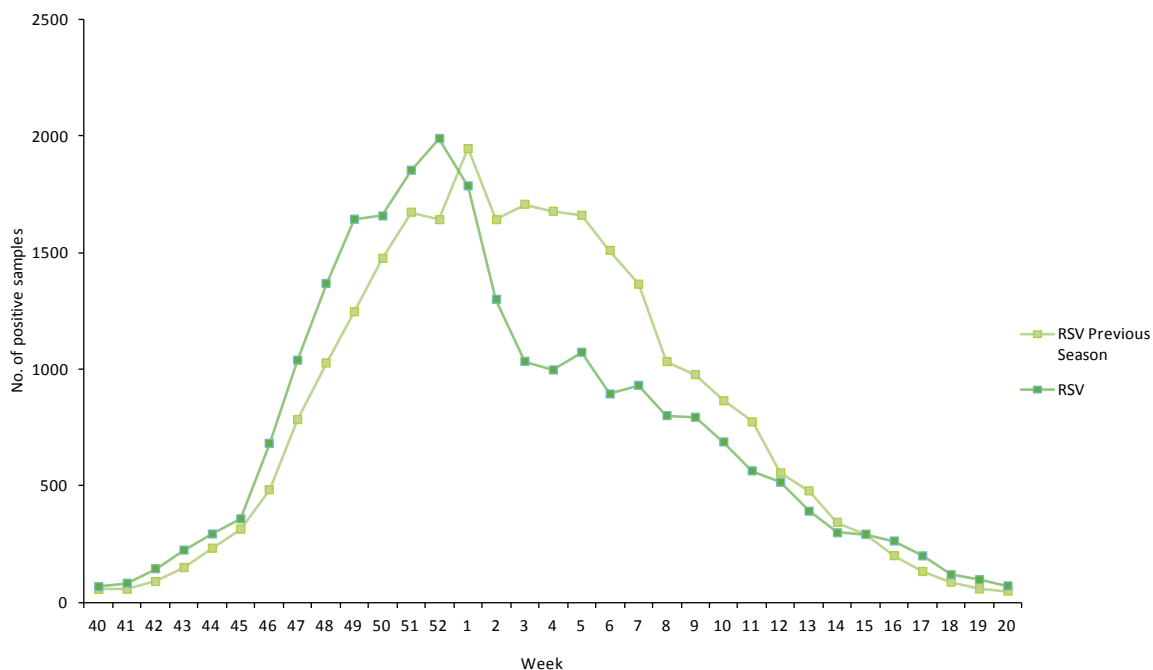


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2011–20/2012

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)	705	0	697	0	174	174 (100%)
A(H1N1)2009	53	0	53	0	7	7 (100%)
B	48	0	47	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 40/2011–20/2012



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

Weekly analysis of severe acute respiratory infection – SARI

Since week 40/2011, a total of 1 829 SARI cases, including 110 fatalities, has been reported to TESSy by seven countries (Table 4). Where patient information was available, the male/female ratio was 1.2 (Table 5).

During week 20/2012, three cases of SARI or severe influenza were reported, but the causative pathogens were unknown (Table 6, Figure 7).

Of the 1 322 cases reported since week 40/2012 and for which the causative pathogen was known, 1 316 (99.5%) were related to influenza virus infection: 1 269 (96%) were type A, and 47 (3.6%) were type B. Of the 821 influenza A viruses subtyped, 774 (94.3%) were of the H3 subtype and 47 (5.7%) of the H1pdm09 subtype (Table 6). France, Ireland, Spain and the United Kingdom only report influenza laboratory-confirmed cases and this creates a bias in the data towards influenza-positive hospital surveillance cases reported to TESSy.

Table 4: Cumulative number of SARI cases, weeks 40/2011–20/2012

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	28	0.51	1	0.02	5440078
Spain	601		47		
United Kingdom	252	0.43			59255492
Total	1829		110		

Figure 7: Number of SARI cases by week of onset, weeks 40/2011–20/2012

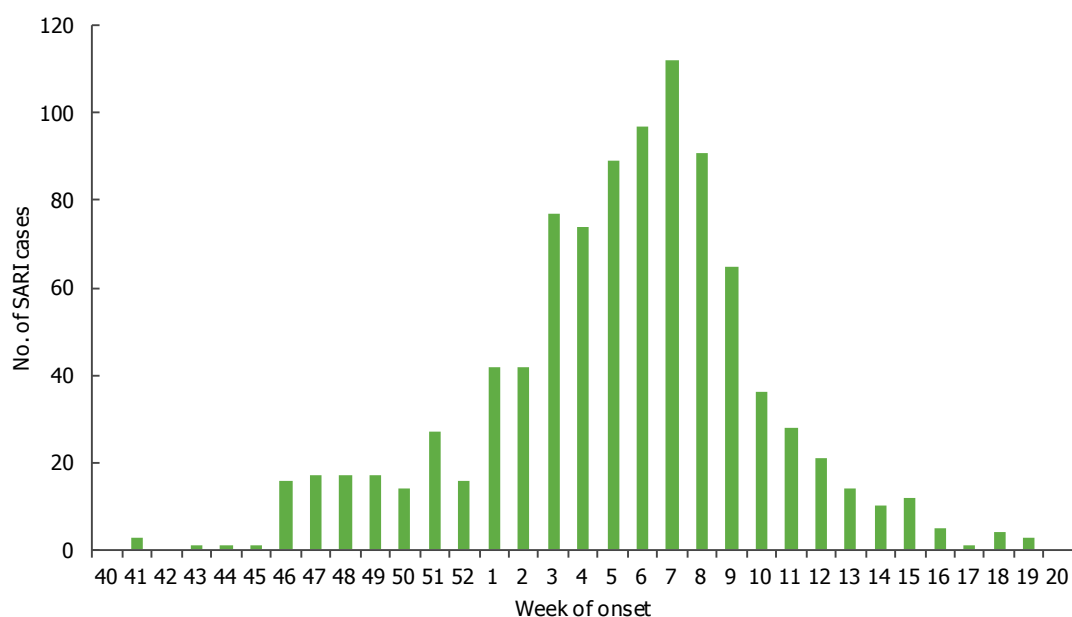


Table 5: Number of SARI cases by age and gender, weeks 40/2011–20/2012

Age groups	Male	Female	Unknown
Under 2	175	122	1
2-17	161	117	4
18-44	75	78	1
45-59	105	89	
>=60	331	304	2
Unknown	8	3	253
Total	855	713	261

Table 6: Number of SARI cases by influenza type and subtype and other pathogens, week 20/2012 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		47
Other pathogen		6
Unknown	3	507
Total	3	1829

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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