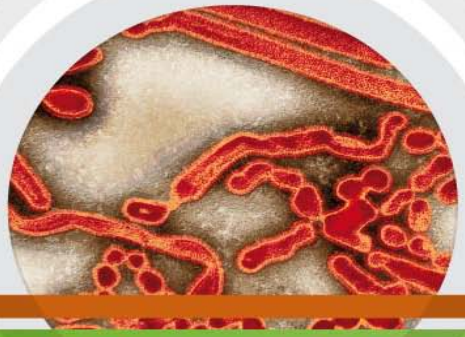


SURVEILLANCE REPORT

Weekly influenza surveillance overview

2 March 2012

Main surveillance developments in week 8/2012 (20–26 Feb 2012)

This first page contains the main developments for this week and can be printed separately or together with the more detailed information below.

The 2011-2012 influenza season started later than in recent seasons and has been without any clear geographic progression. Noteworthy this week:

- Like last week, medium or high intensity was reported by 17 countries; 13 countries reported increasing trends. Bulgaria and Italy have reported decreasing trends for three weeks in a row and thus are the first two countries that have peaked in Europe this season.
- Of 1 712 sentinel specimens tested, 884 (51.6%) were positive for influenza virus, a similar percentage as in the two previous weeks. Of these sentinel viruses, 88.9% were type A and 11.1% were type B. This is the highest percentage for B this season.
- No resistance to neuraminidase inhibitors (oseltamivir and zanamivir) has been reported so far this season.
- The formal WHO review of circulating viruses this season found that influenza A(H3) and B viruses have moved genetically and antigenically away from the 2011–2012 seasonal vaccine viruses. This prompted WHO to recommend different vaccine viruses for the 2012–2013 seasonal vaccine.
- A published analysis of severe influenza cases in France, Ireland, Spain and the United Kingdom found that the 2011–12 season has so far been dominated by influenza A(H3), but hospitalised cases in those four countries showed a relatively greater proportion of influenza A(H1N1)pdm09 viruses.
- The national influenza season epidemics in Europe peaked in the first two countries. Trends are continuing upwards in a number of other countries. The epidemics remain dominated by A(H3) viruses, but B viruses seem to be become more important.

Sentinel surveillance of influenza-like illness (ILI)/acute respiratory infection (ARI): Medium or high intensity was reported by 17 countries and increasing trends by 13 countries. The national influenza season epidemics in Europe have peaked in the first two countries. For more information, **click here**.

Virological surveillance Of the 3 534 influenza viruses detected from sentinel and non-sentinel sources during week 8/2012, 3 352 (94.9%) were type A and 182 (5.1%) were type B. For more information, **click here**.

Hospital surveillance of severe acute respiratory infection (SARI): Since week 40/2011, six countries have reported 750 SARI cases, 530 (70.7%) of which were related to influenza infection. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

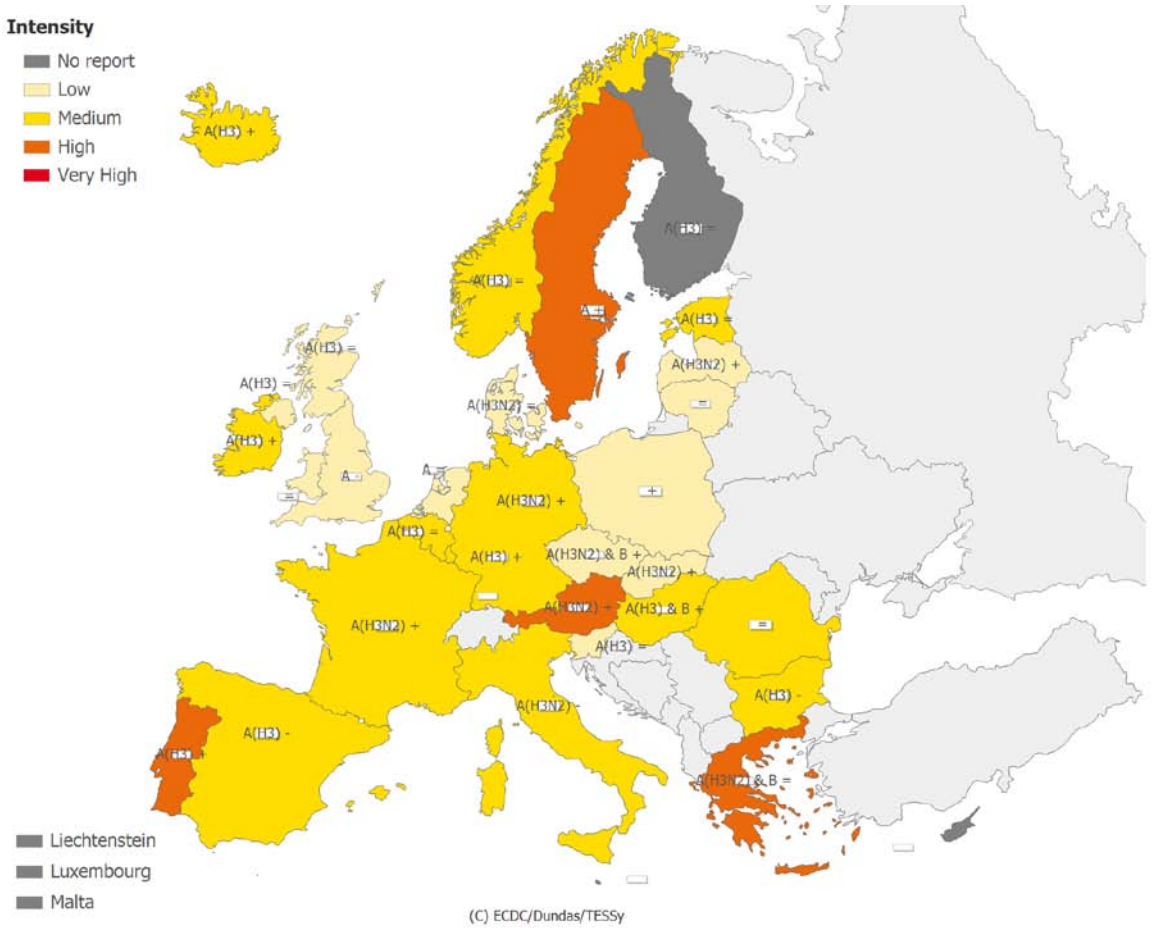
Weekly analysis – epidemiology

During week 8/2012, 27 countries reported clinical data. Low activity was reported by nine countries. Medium intensity was reported by 13 countries (Table 1, Map 1). Austria, Greece, Portugal and Sweden reported high intensity. Italy and Spain have reported medium intensity for seven consecutive weeks, and nine countries have reported medium intensity for at least three consecutive weeks.

Geographic spread was reported as widespread by 13 countries (Austria, Belgium, Finland, France, Greece, Hungary, Italy, Luxembourg, Norway, Portugal, Slovenia, Spain and Sweden), regional by six, local by three, and sporadic by four. One country (Poland) reported no activity (Table 1, Map 2).

Increasing trends in clinical activity were reported by 13 countries, with 12 countries reporting increasing trends for at least two consecutive weeks. Stable trends were reported by 10 countries and decreasing trends by four countries (Table 1, Map 2). Bulgaria and Italy have reported decreasing trends for three consecutive weeks, suggesting that their influenza seasons have peaked.

Map 1: Intensity for week 8/2012

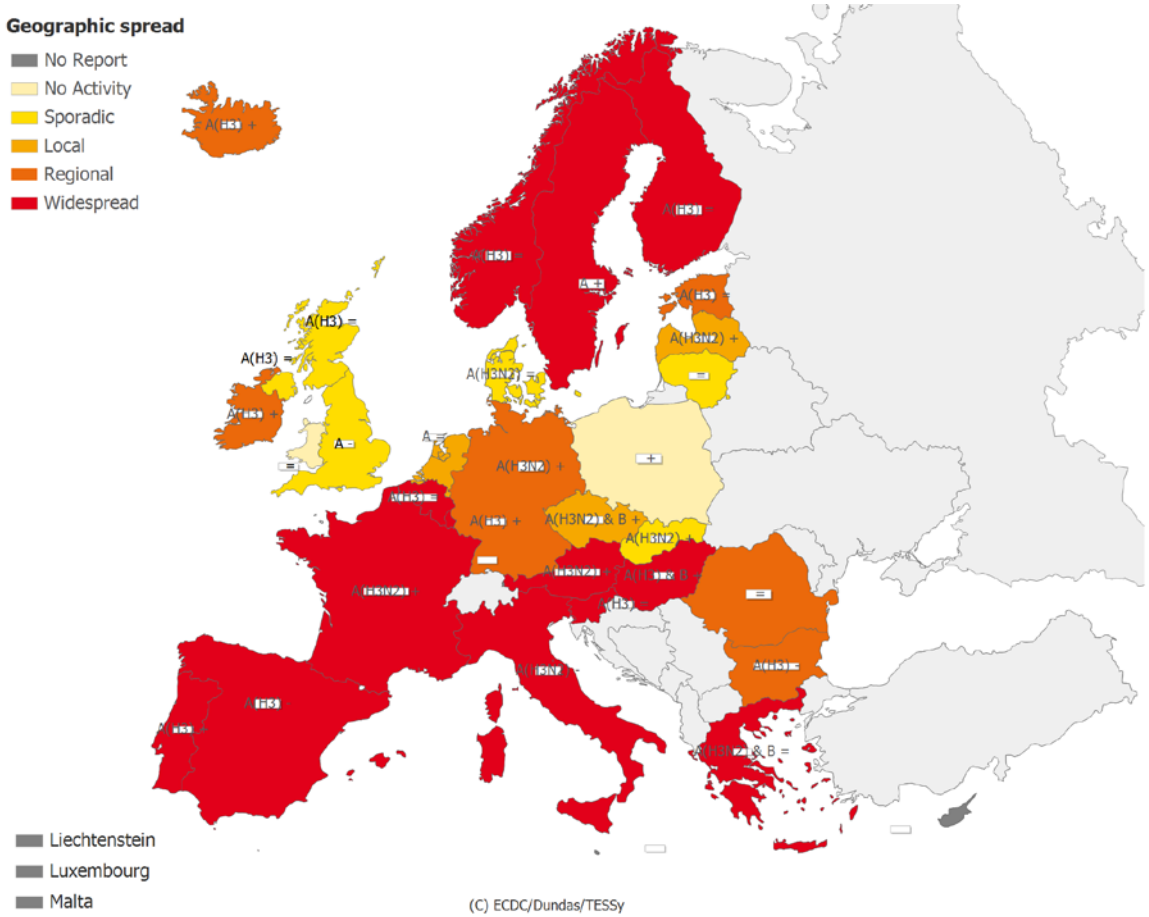


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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
		A(H3) & B	Type B and Type A, Subtype H3
		A(H3N2)	Type A, Subtype H3N2
		A(H3N2) & B	Type B and Type A, Subtype H3N2

Map 2: Geographic spread for week 8/2012



* 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
A(H3) & B	Type B and Type A, Subtype H3
A(H3N2)	Type A, Subtype H3N2
A(H3N2) & B	Type B and Type A, Subtype H3N2

Table 1: Epidemiological and virological overview by country, week 8/2012

Country	Intensity	Geographic spread	Trend	No. of sentinel swabs	Dominant type	Percentage positive*	ILI per 100.000	ARI per 100.000	Epi-demio-logical overview	Viro-logical overview
Austria	High	Widespread	Increasing	67	A(H3N2)	62.7	33.0	-	Graphs	Graphs
Belgium	Medium	Widespread	Stable	88	A(H3)	58.0	527.7	2241.3	Graphs	Graphs
Bulgaria	Medium	Regional	Decreasing	30	A(H3)	63.3	-	1146.6	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	Local	Increasing	29	A(H3N2) & B	48.3	42.3	939.3	Graphs	Graphs
Denmark	Low	Sporadic	Stable	7	A(H3N2)	57.1	62.3	-	Graphs	Graphs
Estonia	Medium	Regional	Stable	16	A(H3)	37.5	10.4	298.0	Graphs	Graphs
Finland	Unknown (no information available)	Widespread	Stable	65	A(H3)	36.9	-	-	Graphs	Graphs
France	Medium	Widespread	Increasing	189	A(H3N2)	65.1	-	2662.4	Graphs	Graphs
Germany	Medium	Regional	Increasing	114	A(H3N2)	40.4	-	1443.7	Graphs	Graphs
Greece	High	Widespread	Stable	66	A(H3N2) & B	77.3	472.4	-	Graphs	Graphs
Hungary	Medium	Widespread	Increasing	82	A(H3) & B	43.9	338.3	-	Graphs	Graphs
Iceland	Medium	Regional	Increasing	0	A(H3)	0.0	113.6	-	Graphs	Graphs
Ireland	Medium	Regional	Increasing	33	A(H3)	48.5	43.1	-	Graphs	Graphs
Italy	Medium	Widespread	Decreasing	90	A(H3N2)	57.8	584.8	-	Graphs	Graphs
Latvia	Low	Local	Increasing	4	A(H3N2)	25.0	15.8	1276.5	Graphs	Graphs
Lithuania	Low	Sporadic	Stable	2	None	0.0	2.3	457.3	Graphs	Graphs
Luxembourg	Medium	Widespread	Increasing	40	A(H3)	30.0	-*	-*	Graphs	Graphs
Malta				-	-	0.0	-	-		
Netherlands	Low	Local	Stable	13	A	46.2	44.1	-	Graphs	Graphs
Norway	Medium	Widespread	Stable	17	A(H3)	64.7	156.5	-	Graphs	Graphs
Poland	Low	No activity	Increasing	32	None	12.5	161.9	-	Graphs	Graphs
Portugal	High	Widespread	Increasing	11	A(H3)	36.4	138.3	-	Graphs	Graphs
Romania	Medium	Regional	Stable	-	-	0.0	6.7	862.7	Graphs	Graphs
Slovakia	Low	Sporadic	Increasing	3	A(H3N2)	100.0	226.4	1826.4	Graphs	Graphs
Slovenia	Low	Widespread	Stable	36	A(H3)	80.6	19.0	1204.8	Graphs	Graphs
Spain	Medium	Widespread	Decreasing	435	A(H3)	50.1	201.7	-	Graphs	Graphs
Sweden	High	Widespread	Increasing	126	A	58.7	37.9	-	Graphs	Graphs
UK - England	Low	Sporadic	Decreasing	90	A	37.8	16.1	448.9	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Stable	3	A(H3)	33.3	24.7	457.8	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	22	A(H3)	13.6	13.7	531.4	Graphs	Graphs
UK - Wales	Low	No activity	Stable	2	-	0.0	11.2	-	Graphs	Graphs
Europe				1712		51.6				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 8/2012, 24 countries reported virological data. Of 1 712 sentinel specimens tested, 884 (51.6%) were positive for influenza virus (Table 1, Figure 1), with 88.9% type A and 11.1% type B (Table 2). In 12 countries, proportions of positive specimens exceeded 50%.

Of the 3 534 influenza viruses detected from sentinel and non-sentinel sources during week 8/2012, 3 352 (94.9%) were type A and 182 (5.1%) were type B. Of the 1 257 influenza A viruses subtyped, 1 224 (97.4%) were A(H3) and 33 (2.6%) were A(H1)pdm09 (Table 2).

Of the 15 103 influenza virus detections in sentinel and non-sentinel specimens since week 40/2011, 14 453 (95.7%) were type A and 650 (4.3%) were type B viruses. Of 7 840 influenza A viruses subtyped, 7 646 (97.5%) were A(H3) viruses and 194 (2.5%) were A(H1)pdm09 (Table 2, Figures 2 and 3). The lineage of 90 influenza B viruses has been determined: 51 (56.7%) were B-Victoria and 39 (43.3%) were B-Yamagata lineage (Table 2).

Since week 40/2011, 250 antigenic characterisations of viruses have been reported, of which 221 (88.4%) were A/Perth/16/2009 (H3N2)-like (Figure 4).

Since week 40/2011, 530 genetic characterisations of viruses have been reported, of which 306 (57.7%) were A(H3) viruses falling 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 but remain antigenically similar to the current vaccine virus A/Perth/16/2009. Since week 40/2011, 466 (86.9%) of the genetically characterised and reported viruses have been A(H3) viruses.

More details on the antigenic and genetic characteristics of circulating viruses can be found in the February report prepared by the Community Network of Reference Laboratories (CNRL) coordination team.

Between week 40/2011 and week 8/2012, antiviral susceptibility data was reported from England, Germany, Italy, the Netherlands, Norway, Portugal, Romania and Sweden. None of the A(H1N1)pdm09, A(H3N2) and B viruses tested for neuraminidase inhibitor susceptibility were resistant. All A(H1N1)pdm09 and A(H3N2) viruses screened for M2 blocker susceptibility were resistant (Table 3).

No zoonotic influenza infections of humans (i.e. viruses not usually infecting and circulating among humans) within EU/EEA countries have been reported to ECDC this week. Such reporting is recommended by WHO.

In week 8/2012, 19 countries reported 716 respiratory syncytial virus (RSV) detections (Figure 6). Since week 52/2011, the number of RSV detections has decreased continuously.

WHO carried out its strain selection for the next northern hemisphere season (2012–2013); vaccines will become available in late summer. There is a headline report on the vaccine recommendations and also a more detailed report which also contains information on antiviral resistance and the laboratory-assessed match between this season's vaccine and circulating viruses. It was recommended to make changes in both the A(H3N2) and B virus components. In response, ECDC has published a public health development (with commentary).

Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2011–8/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	786	2566	5162	9291
A(H1)pdm09	9	24	55	139
A(H3)	597	627	4528	3118
A(subtyping not performed)	180	1915	579	6034
Influenza B	98	84	324	326
B(Vic) lineage	8	1	24	27
B(Yam) lineage	5	3	20	19
Unknown lineage	85	80	280	280
Total Influenza	**884**	**2650**	**5486**	**9617**

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 40/2011–8/2012

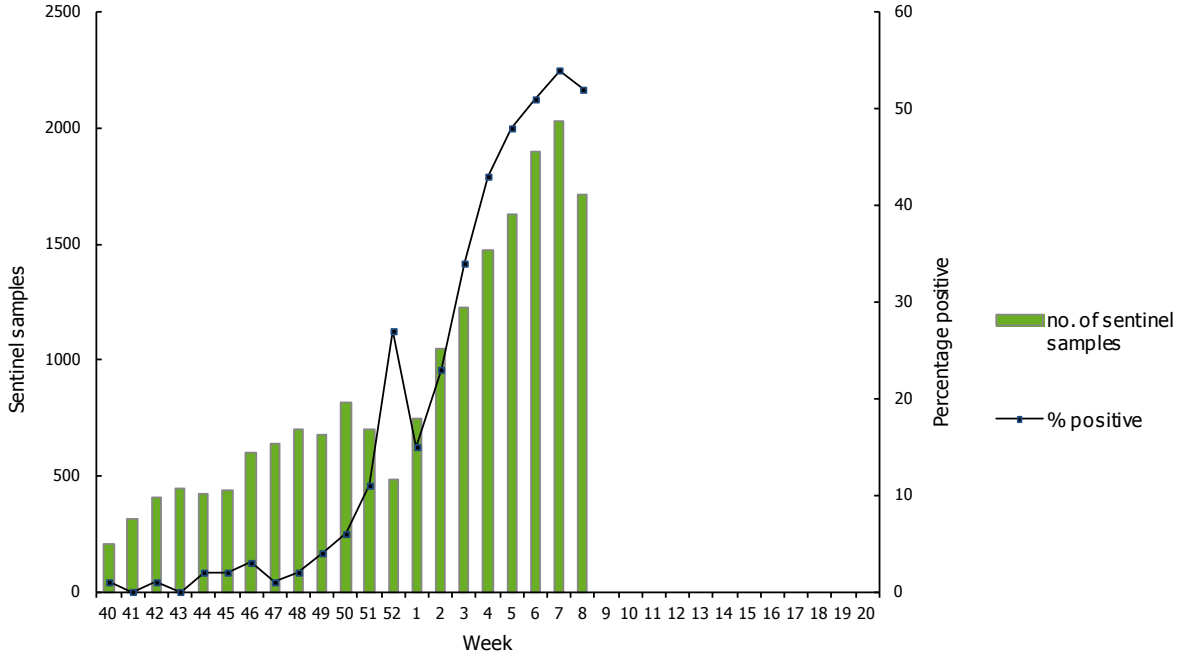


Figure 2: Number of sentinel specimens positive for influenza virus, by type, subtype, and by week of report, weeks 40/2011–8/2012

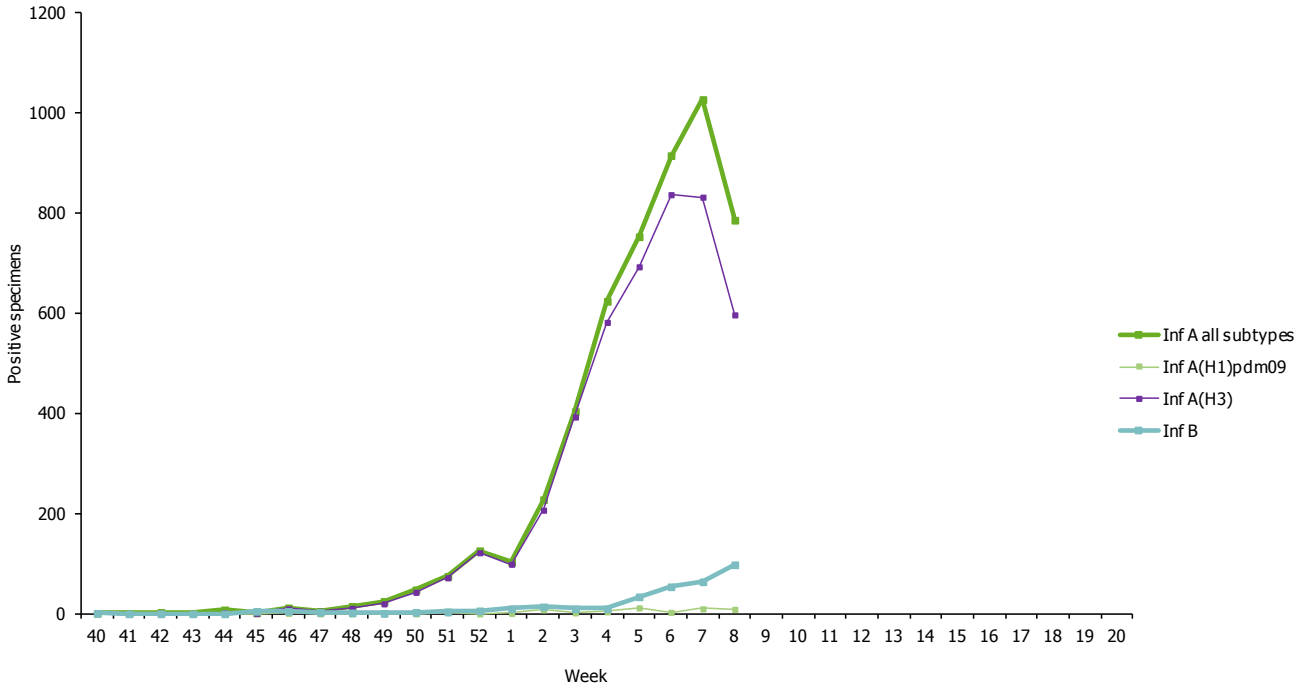


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2011–8/2012

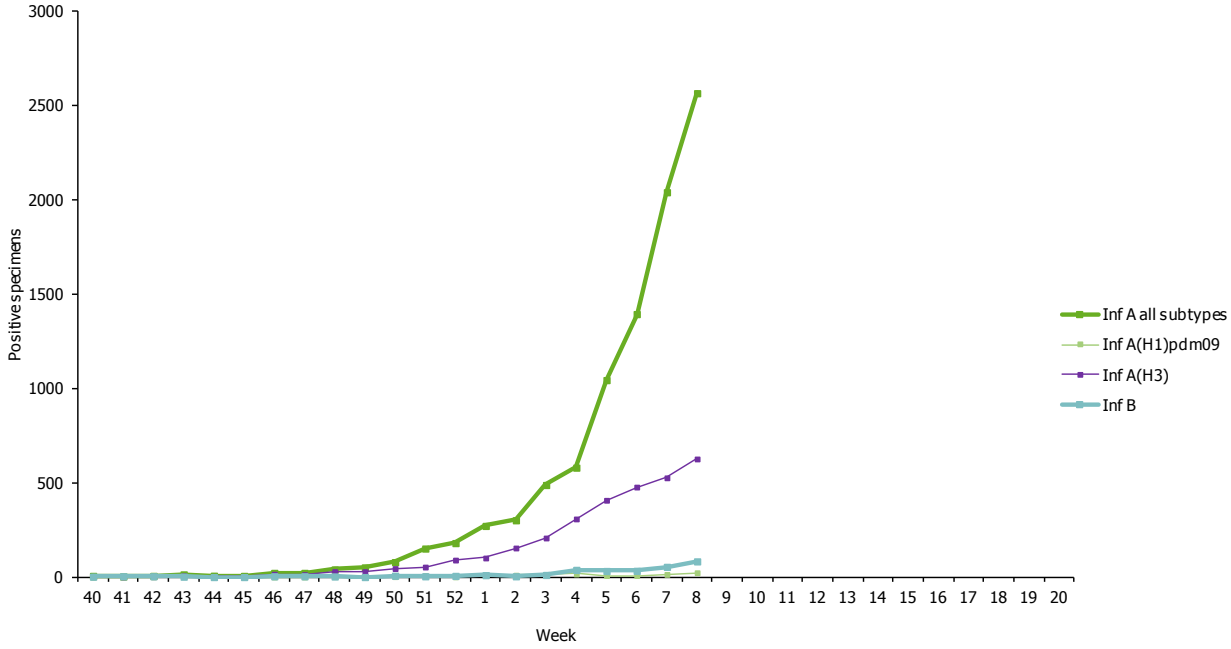


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–8/2012

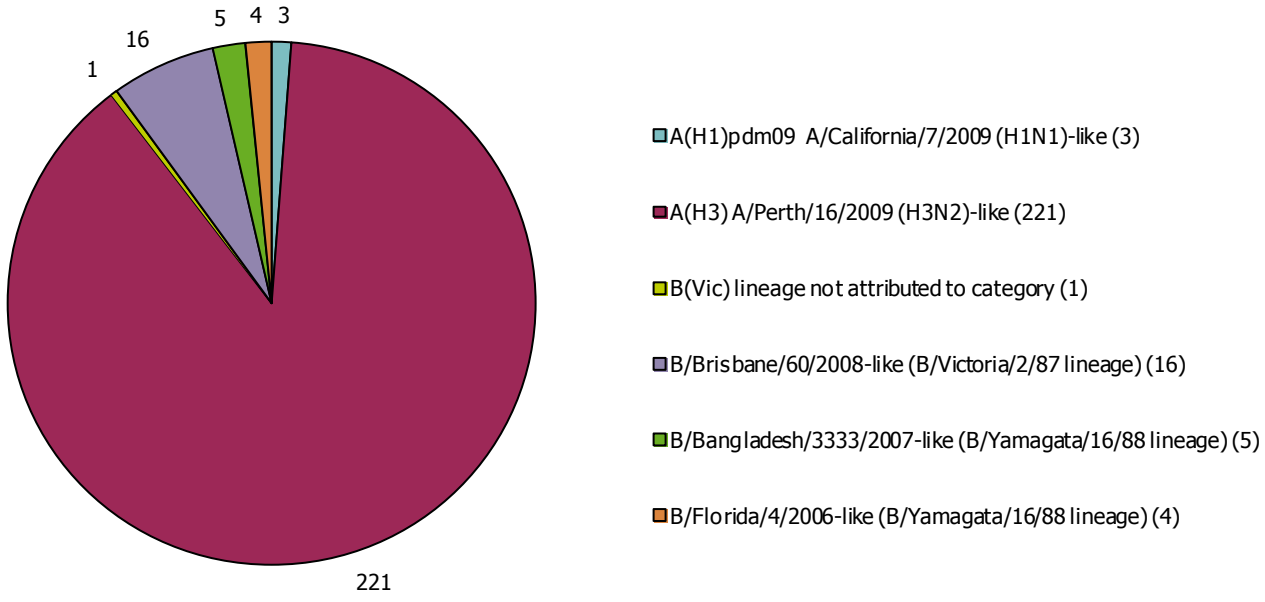


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–8/2012

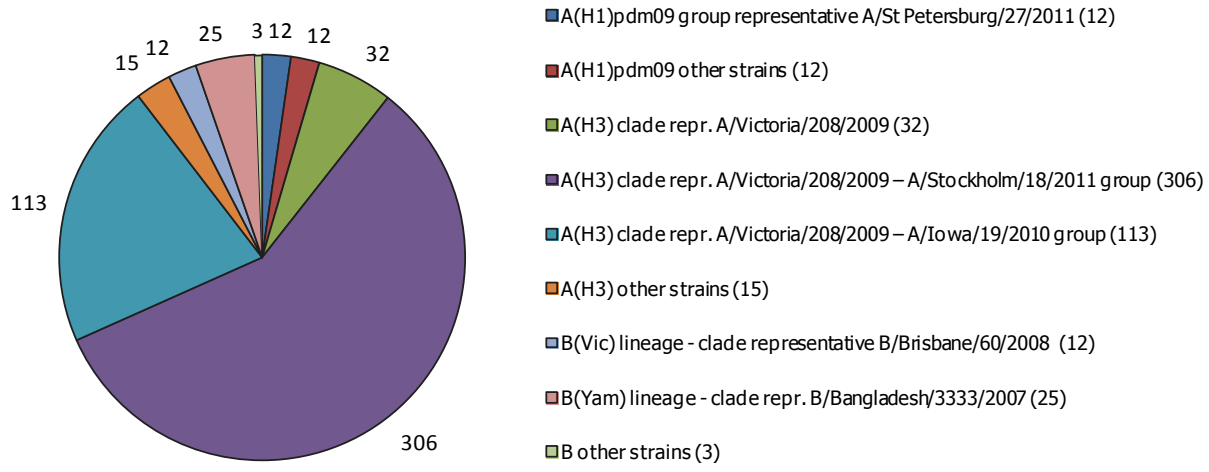
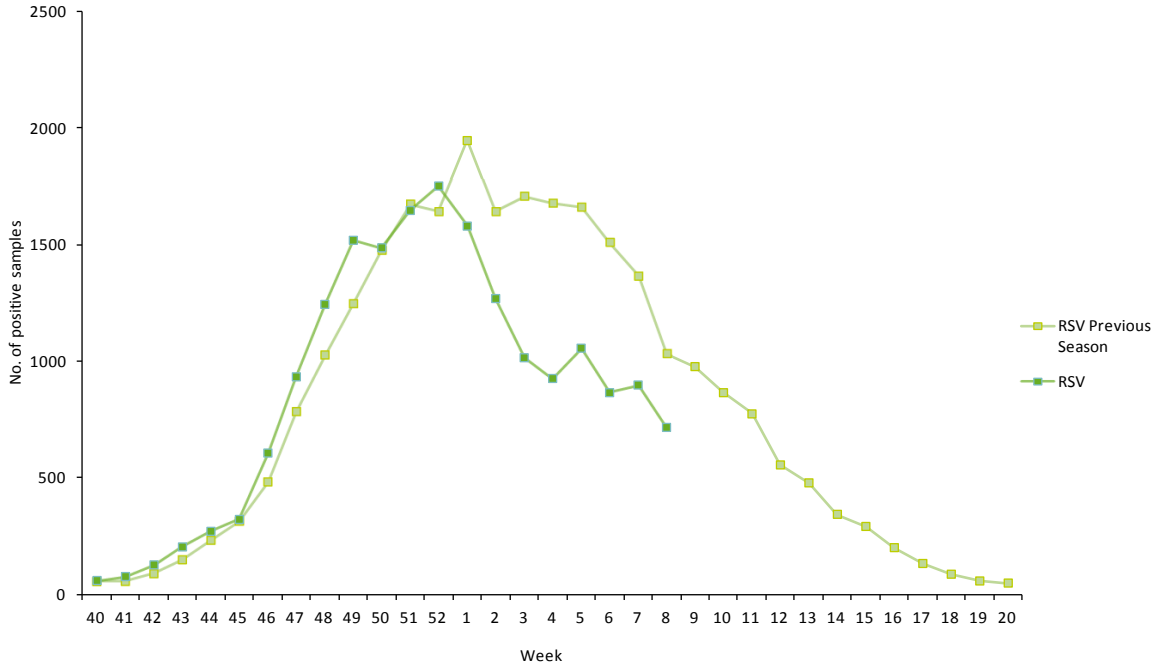


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2011–8/2012

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)	163	0	156	0	91	91 (100)
A(H1N1)pdm 09	27	0	27	0	7	7 (100)
B	14	0	13	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 40/2011–8/2012



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 750 SARI cases and 28 fatalities have been reported by six countries (Table 4 and Figure 7). Of 688 patients for whom information was available, 377 (54.8%) were male (Table 5).

Of 51 SARI cases reported in week 8/2012, 36 were related to influenza virus infection, of which 26 were of the A(H3) subtype (Table 6).

Of the 750 cumulative cases since week 40/2011, 530 (70.7%) were influenza-related. Of these, 374 viruses have undergone typing and subtyping, revealing that 332 (88.8%) were associated with A(H3) infection, 23 (6.1%) with A(H1N1)pdm09, and 19 (5.1%) with type B (Table 6).

Of 280 SARI cases admitted to ICU since week 40/2011, at least 77 (27.5%) required ventilation (Table 7).

Of 326 SARI cases for which vaccination status was available, 216 (66.3%) were not vaccinated against influenza (Table 8).

A formal analysis of severe influenza cases in France, Ireland, Spain and the United Kingdom (published in Eurosurveillance) found that the 2011–12 season has been dominated so far by influenza A(H3), but hospitalised laboratory-confirmed influenza cases in those countries showed a relatively greater proportion of influenza A(H1N1)pdm09 viruses.

Also compared to the season 2010/11, the proportion of subtype A(H3) among hospitalised cases has increased, and is associated with a larger proportion of cases in the oldest and youngest age groups.

Table 4: Cumulative number of SARI cases, weeks 40/2011–8/2012

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
France	78		5		
United Kingdom	62	0.1			59255492
Romania	244	4.2	4	0.07	5813728
Spain	348		16		
Slovakia	13	0.24			5440078
Ireland	5		3		
Total	**750**		**28**		

Figure 7: Number of SARI cases by week of onset, weeks 40/2011–8/2012

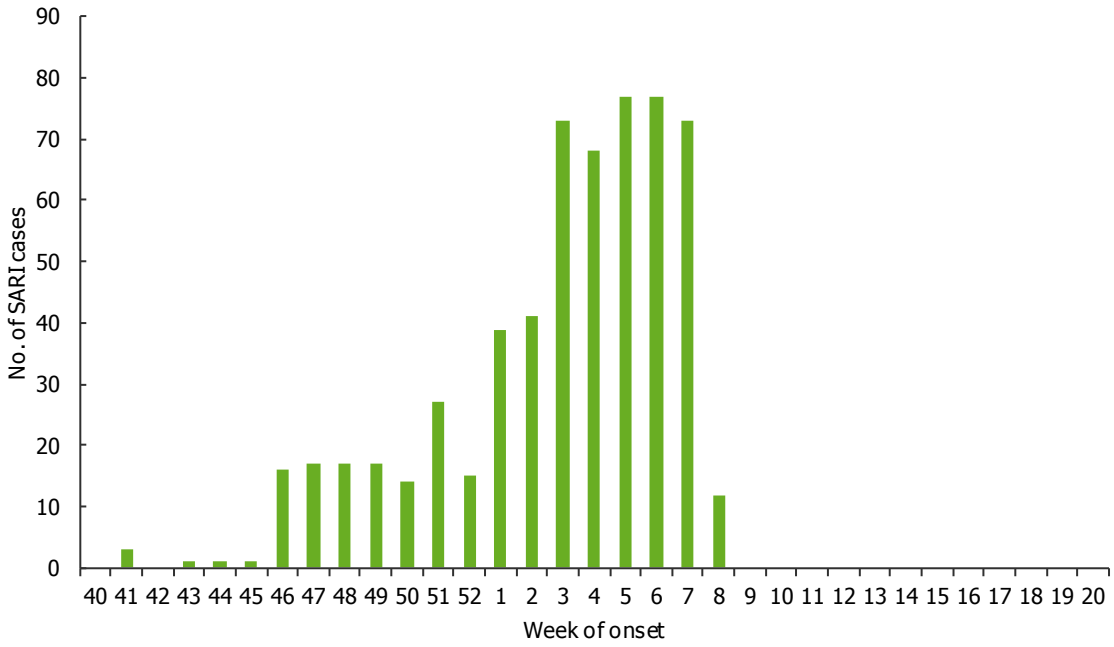


Table 5: Number of SARI cases by age and gender, weeks 40/2011–8/2012

Age groups	Male	Female	Unknown
2-17	85	65	
Under 2	91	70	
18-44	30	38	
Unknown	2		**62**
45-59	46	35	
>=60	123	103	
Total	**377**	**311**	**62**

Table 6: Number of SARI cases by influenza type and subtype and other pathogens, week 8/2012 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	34	511
A(H1)pdm09		23
A(H3)	26	332
A(subtyping not performed)	8	156
Influenza B	2	19
Other pathogen		2
Unknown	15	218
Total	51	750

Table 7: Number of SARI cases by level of care and respiratory support, weeks 40/2011–8/2012

Respiratory support	ICU	In-patient ward	Other	Unknown
No respiratory support necessary	21	124		
Oxygen therapy	17	74		
Respiratory support given unknown	165	9	209	42
Ventilator	77			

Table 8: Number of SARI cases by influenza vaccination status, weeks 40/2011–8/2012

Vaccination status	No. of influenza cases	Percentage of cases
Seasonal vaccination	59	11.1
Vaccinated for A(H1N1)2009	7	1.3
Fully vaccinated for seasonal & A(H1N1)20	44	8.3
Not vaccinated	216	40.8
Unknown	204	38.5
TOTAL	**530**	

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.