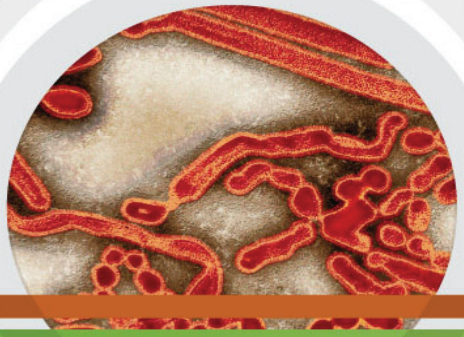


SURVEILLANCE REPORT

Weekly influenza surveillance overview

13 April 2012

Main surveillance developments in week 14/2012 (2 – 8 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 2011/12 influenza season started late, has been without any clear geographic progression across Europe and transmission has been declining in a number of countries since around week 9. The following points are noteworthy this week:

- Decreasing trends were reported by 20 countries, 18 of which have done so for at least two consecutive weeks while no country reported an increasing trend.
- Of 439 sentinel specimens tested, 30.1% were positive for influenza virus. This proportion has decreased for six consecutive weeks from a peak of nearly 60% in week 8. Of the positive sentinel specimens, 65.2% were type A and 34.8% type B. This is the highest proportion of B-type viruses in sentinel samples so far this season.
- There has been a degree of heterogeneity in the antigenicity of the A(H3) viruses this season and an imperfect fit with the A(H3) component in the seasonal vaccine.
- Since week 40/2011, a total of 1 685 SARI cases, including 97 fatalities, have been reported by seven countries. Of these cases, most were influenza-related.
- No resistance to neuraminidase inhibitors (oseltamivir and zanamivir) has been reported so far this season.

The decrease in the proportion of influenza-positive sentinel specimens together with the growing number of countries reporting continuously decreasing trends in the incidence of ILI or ARI indicate that the epidemic peak has passed in almost all European countries. However, the proportion of positive specimens indicates that the level of influenza circulation is still considerable in Europe. As often observed late in the season, the proportion of influenza B viruses among detected influenza viruses has been increasing over the past eight weeks.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Low intensity was reported by 22 countries and medium intensity by four countries, while none reported high intensity. For more information, **click here**.

Virological surveillance Of the 694 influenza viruses detected from sentinel and non-sentinel sources during week 14/2012, 601 (86.6%) were type A and 93 (13.4%) were type B. For more information, **click here**.

Hospital surveillance of severe acute respiratory infection (SARI): Since week 40/2011, seven countries have reported 1 209 SARI cases related to influenza virus infection. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

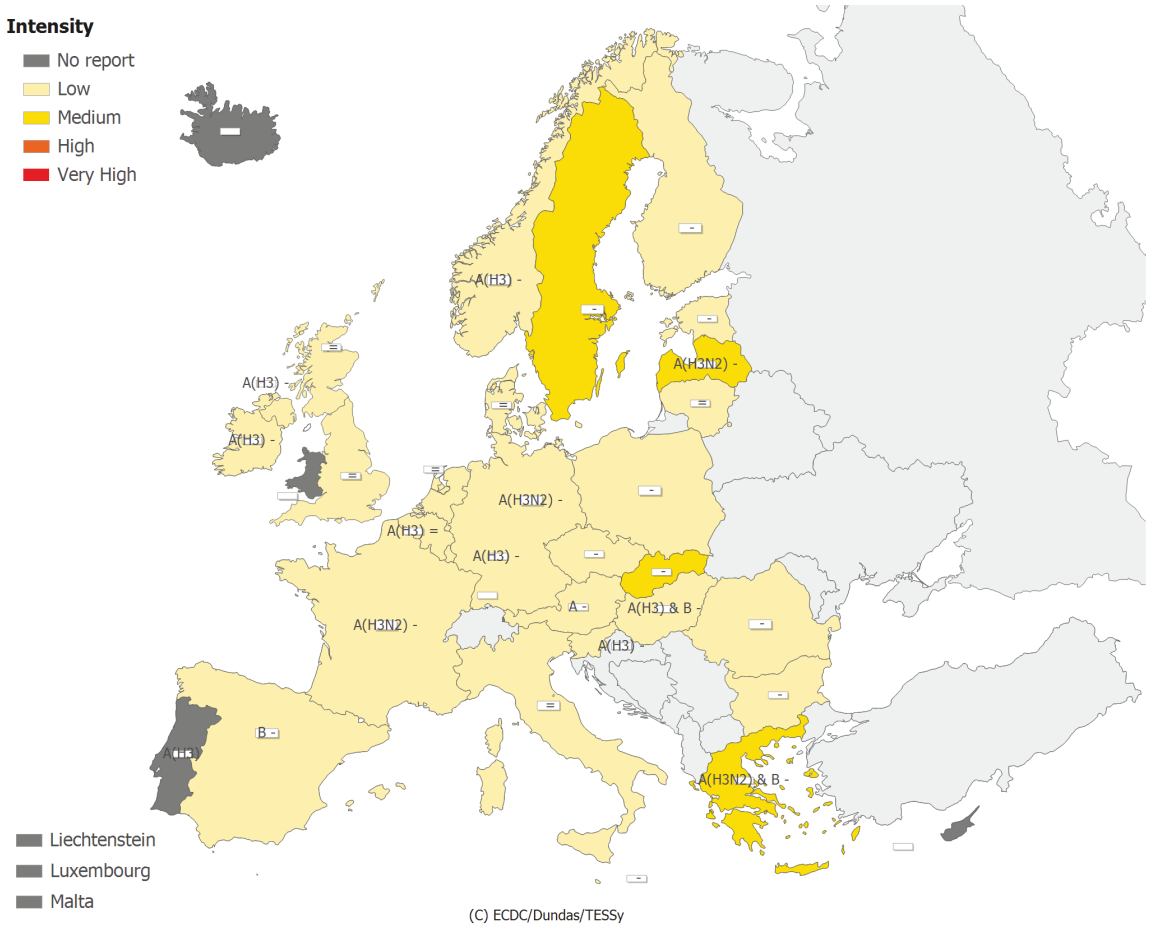
Weekly analysis – epidemiology

During week 14/2012, 26 countries reported clinical data. Low intensity was reported by 22 countries and medium intensity by four countries. This is the third week with no country reporting high intensity (Table 1, Map 1). Twenty countries have reported low intensity for at least two consecutive weeks.

Geographic spread was reported as widespread by Estonia, Slovenia and Sweden and as regional by France, Greece, Latvia and Norway. Local spread was reported by 10 countries, sporadic activity by six and no activity by three (Table 1, Map 2).

No country reported an increasing trend in clinical activity. Decreasing trends were reported by 20 countries (Table 1, Map 2) of which 18 have done so for at least two consecutive weeks, suggesting that their influenza seasons have peaked. A stable trend was reported by six countries (Table 1, Map 2).

Map 1: Intensity for week 14/2012

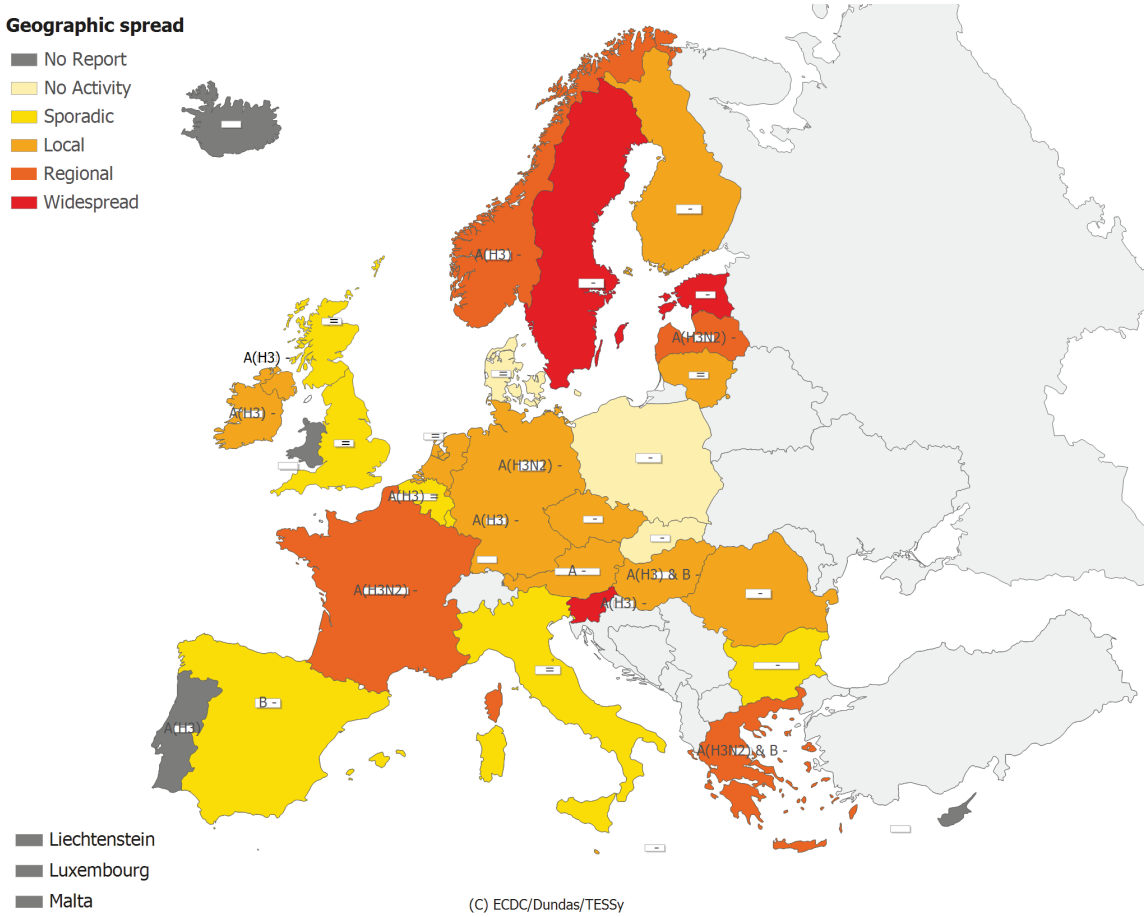


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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
		B	Type B

Map 2: Geographic spread for week 14/2012



* 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
B	Type B

Table 1: Epidemiological and virological overview by country, week 14/2012

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	Local	Decreasing	13	A	46.2	6.5	-	Graphs	Graphs
Belgium	Low	Sporadic	Stable	15	A(H3)	46.7	68.2	1438.0	Graphs	Graphs
Bulgaria	Low	Sporadic	Decreasing	0	None	0.0	-	619.3	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	Local	Decreasing	-	-	0.0	48.6	914.1	Graphs	Graphs
Denmark	Low	No activity	Stable	0	None	0.0	14.4	-	Graphs	Graphs
Estonia	Low	Widespread	Decreasing	16	-	43.8	10.3	245.3	Graphs	Graphs
Finland	Low	Local	Decreasing	10	None	20.0	-	-	Graphs	Graphs
France	Low	Regional	Decreasing	58	A(H3N2)	34.5	-	1383.0	Graphs	Graphs
Germany	Low	Local	Decreasing	34	A(H3N2)	26.5	-	912.8	Graphs	Graphs
Greece	Medium	Regional	Decreasing	18	A(H3N2) & B	61.1	97.7	-	Graphs	Graphs
Hungary	Low	Local	Decreasing	39	A(H3) & B	35.9	71.1	-	Graphs	Graphs
Iceland				0	None	0.0	-	-	Graphs	Graphs
Ireland	Low	Local	Decreasing	6	A(H3)	16.7	6.3	-	Graphs	Graphs
Italy	Low	Sporadic	Stable	20	None	25.0	82.5	-	Graphs	Graphs
Latvia	Medium	Regional	Decreasing	1	A(H3N2)	0.0	91.1	927.3	Graphs	Graphs
Lithuania	Low	Local	Stable	5	-	80.0	6.6	418.3	Graphs	Graphs
Luxembourg	Low	Sporadic	Decreasing	14	A(H3)	50.0	-*	-*	Graphs	Graphs
Malta	Low	Local	Decreasing	-	-	0.0	-*	-*	Graphs	Graphs
Netherlands	Low	Local	Stable	-	-	0.0	31.6	-	Graphs	Graphs
Norway	Low	Regional	Decreasing	1	A(H3)	0.0	35.2	-	Graphs	Graphs
Poland	Low	No activity	Decreasing	19	None	21.1	87.2	-	Graphs	Graphs
Portugal				4	A(H3)	0.0	-	-	Graphs	Graphs
Romania	Low	Local	Decreasing	13	None	23.1	2.1	584.7	Graphs	Graphs
Slovakia	Medium	No activity	Decreasing	15	None	40.0	214.0	1543.6	Graphs	Graphs
Slovenia	Low	Widespread	Decreasing	10	A(H3)	70.0	14.2	936.1	Graphs	Graphs
Spain	Low	Sporadic	Decreasing	45	B	26.7	14.9	-	Graphs	Graphs
Sweden	Medium	Widespread	Decreasing	22	-	4.5	14.8	-	Graphs	Graphs
UK - England	Low	Sporadic	Stable	45	None	11.1	5.5	319.2	Graphs	Graphs
UK - Northern Ireland	Low	Local	Decreasing	3	A(H3)	33.3	17.0	375.7	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	13	None	0.0	11.7	521.8	Graphs	Graphs
UK - Wales				-	-	0.0	-	-		
Europe				439		30.1				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 14/2012, 27 countries reported virological data. Of 439 sentinel specimens tested, 132 (30.1%) were positive for influenza virus (Table 1, Figure 1), of which 65.2% were type A and 34.8% type B (Table 2). This is the highest proportion of B-type viruses in sentinel samples so far this season. However, the number of B-type viruses detected has actually decreased since the previous week, but at a slower pace than the type A viruses (Figure 2). This is the sixth consecutive week with decreases in both number of detections and proportion of positive sentinel specimens, indicating that the peak of the epidemic at the EU/EEA level has passed (Figure 1).

Of the 694 influenza viruses detected from sentinel and non-sentinel sources during week 14/2012, 601 (86.6%) were type A and 93 (13.4%) were type B. Of the 198 influenza A viruses subtyped, 187 (94.4%) were A(H3) and 11 (5.6%) were A(H1)pdm09 (Table 2).

Of the 30 508 influenza virus detections in sentinel and non-sentinel specimens since week 40/2011, 28 788 (94.4%) were type A and 1 720 (5.6%) were type B viruses. Of 13 653 influenza A viruses subtyped, 13 287 (97.3%) were A(H3) viruses and 366 (2.7%) were A(H1)pdm09 (Table 2, Figures 2 and 3). The lineage of 254 influenza B viruses has been determined: 145 (57.1%) were B-Victoria and 109 (42.9%) were B-Yamagata lineage (Table 2).

Since week 40/2011, 1 353 antigenic characterisations of viruses have been reported, of which 1 119 (82.7%) were A/Perth/16/2009 (H3N2)-like (Figure 4).

Since week 40/2011, 1 048 genetic characterisations of viruses have been reported; of the 921 A(H3) viruses characterised, 591 (64.2%) 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. This is consistent with the decision of WHO to recommend changes in the strain selection for next season. See WHO report and ECDC analysis and comment.

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 14/2012, antiviral susceptibility data were reported by Germany, Italy, the Netherlands, Norway, Portugal, Romania, Sweden and the UK. 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 susceptibility to the adamantane class of antivirals 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.

In week 14/2012, 14 countries reported 32 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 40/2011–14/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	86	515	7982	20806
A(H1)pdm09	0	11	89	277
A(H3)	55	132	7054	6233
A(subtyping not performed)	31	372	839	14296
Influenza B	46	47	826	894
B(Vic) lineage	2	4	87	58
B(Yam) lineage	3	0	56	53
Unknown lineage	41	43	683	783
Total influenza	**132**	**562**	**8808**	**21700**

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 40/2011–14/2012

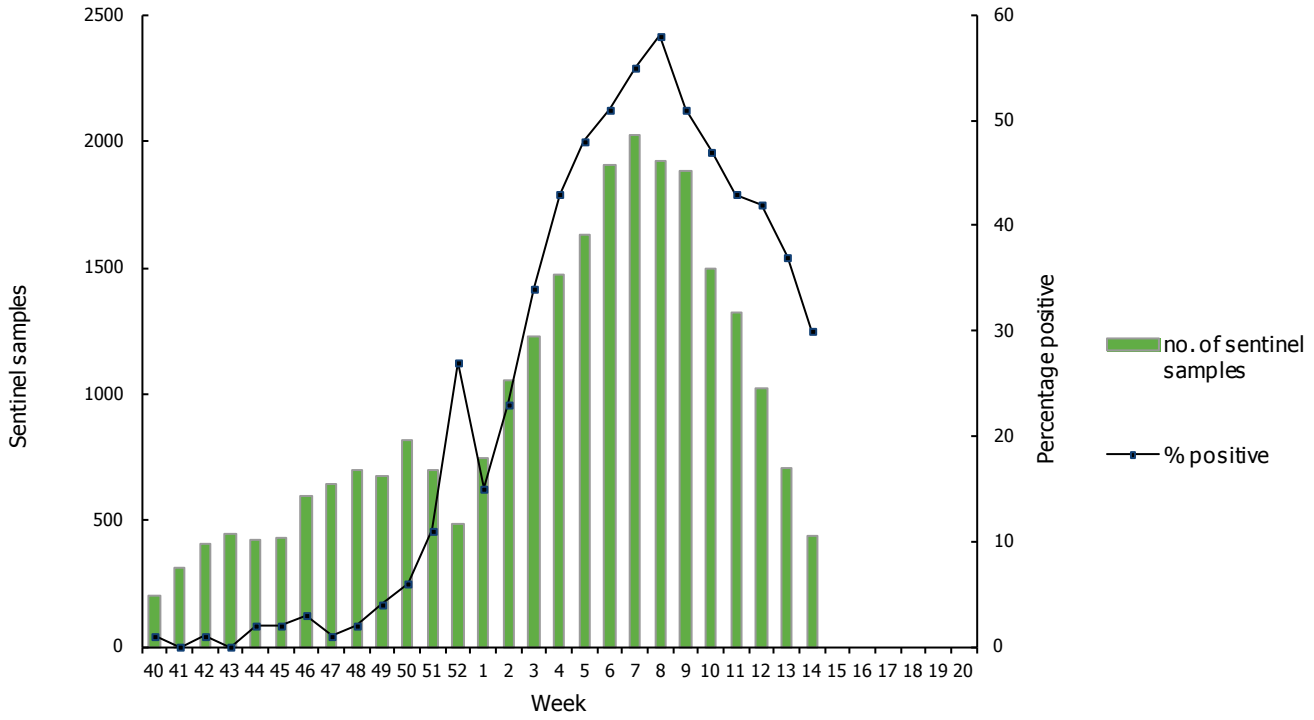


Figure 2: Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40/2011–14/2012

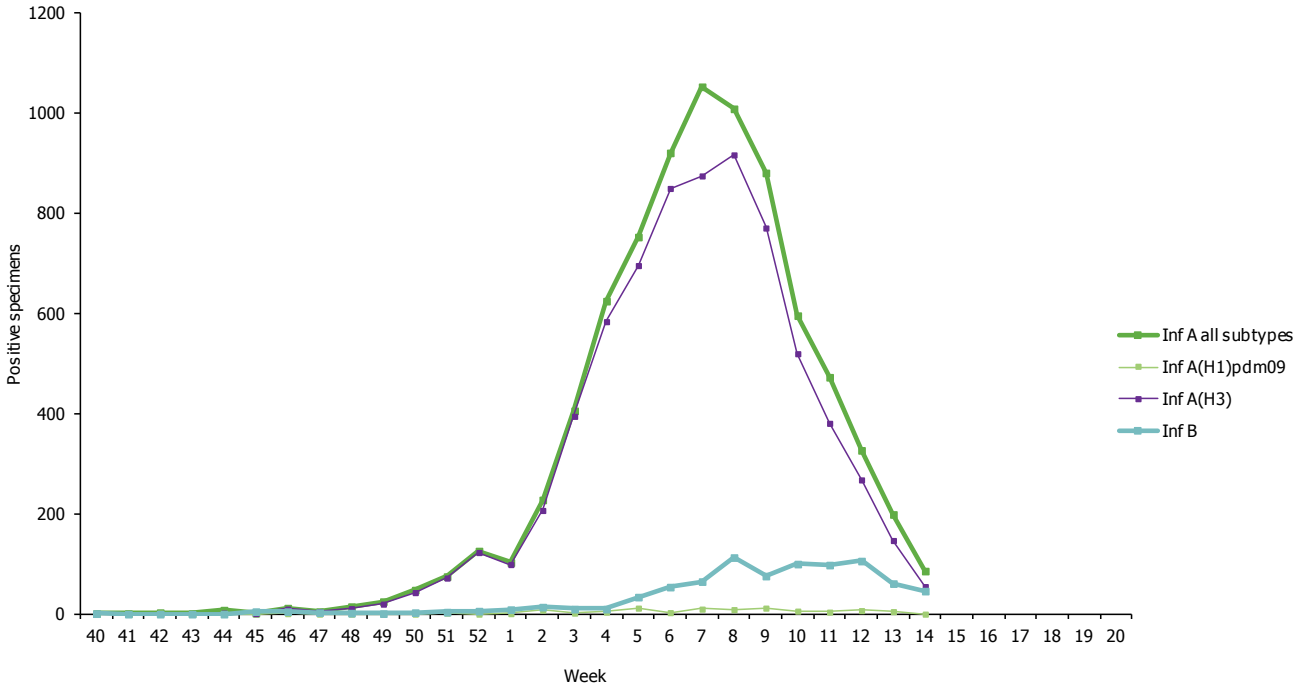


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2011–14/2012

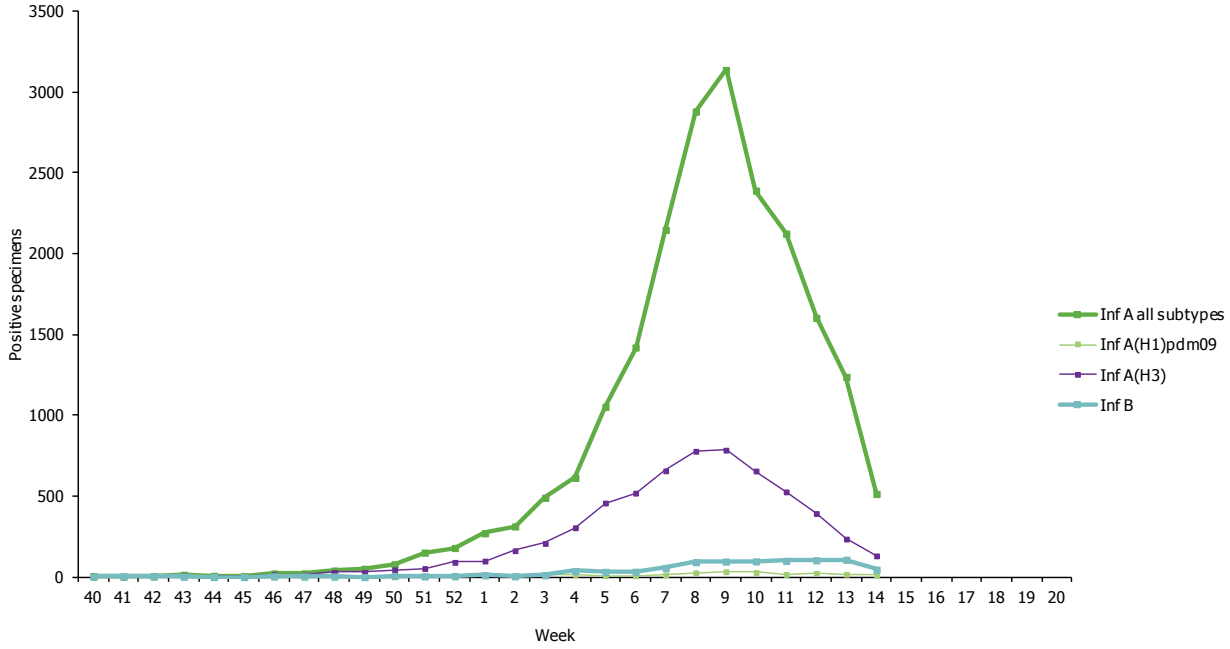


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–14/2012

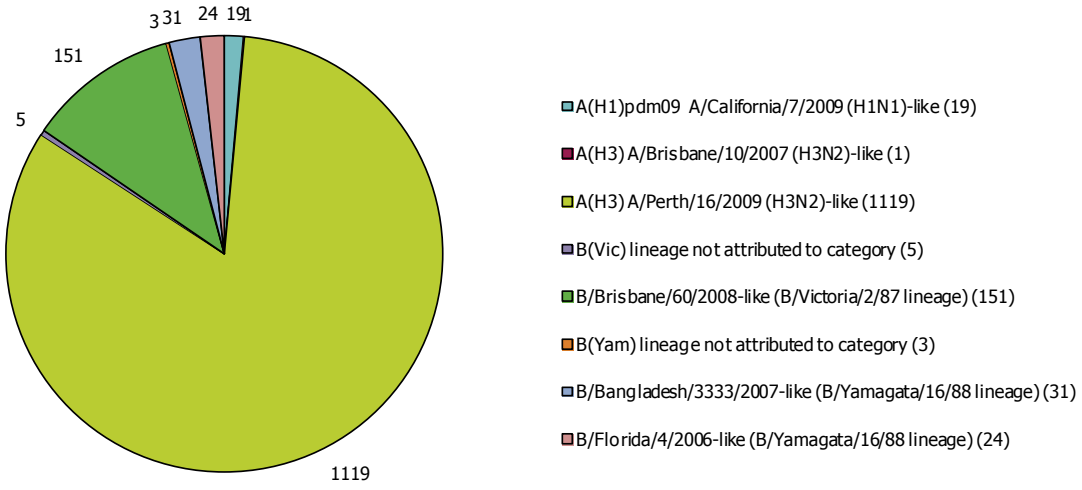


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–14/2012

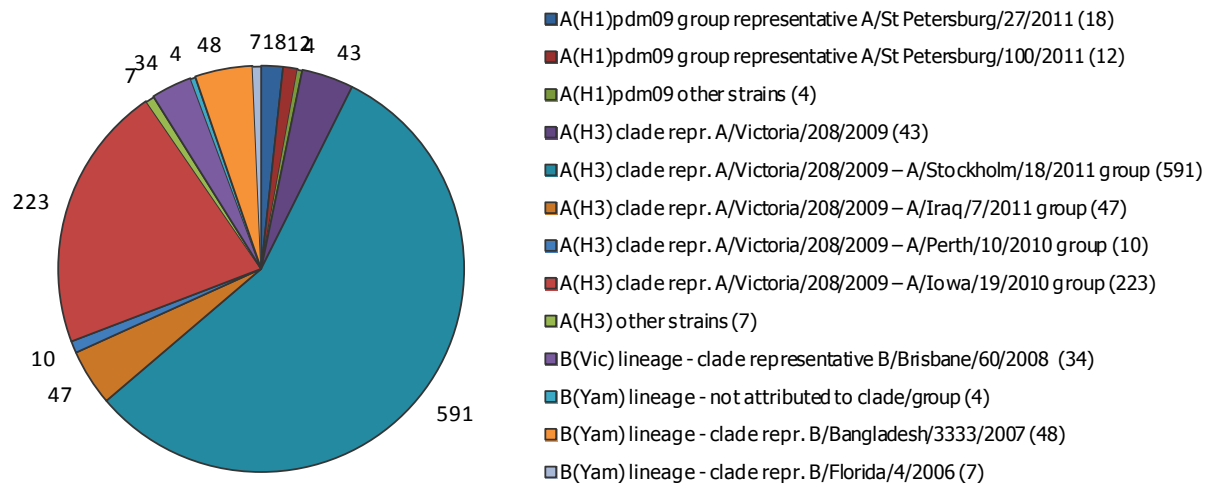
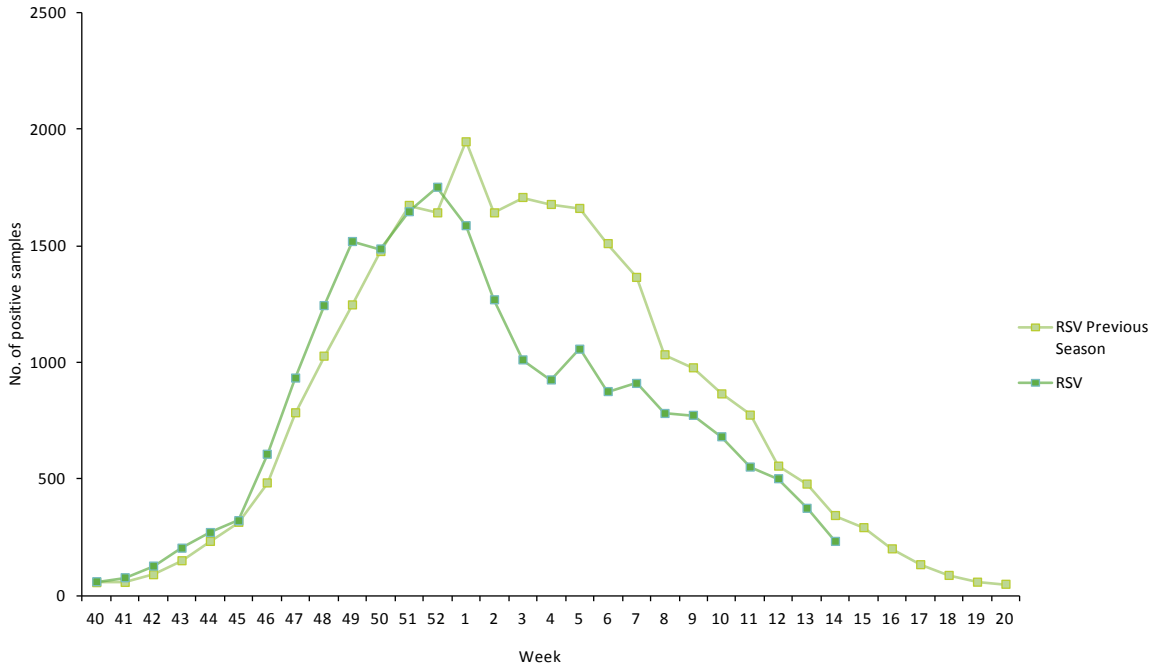


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2011–14/2012

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)	491	0	483	0	118	118 (100)
A(H1N1)pdm 09	35	0	35	0	10	10 (100)
B	40	0	39	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 40/2011–14/2012



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 1 685 SARI cases, including 97 fatalities, have been reported by seven countries (Table 4 and Figure 7). Of 1 477 patients for whom information was available, 809 (54.8%) were male (Table 5).

Of 19 SARI cases reported in week 14/2012, three were related to influenza virus infection, of which two were of the A(H3) subtype (Table 6).

Of the 1 209 cumulative influenza-related cases since week 40/2011, 1 167 (96.5%) were type A viruses; of these 736 have been subtyped, revealing that 695 (94.4%) were associated with A(H3) infection and 41 (5.6%) with A(H1)pdm09 (Table 6).

Since week 40/2011, at least 272 (36.7%) of 741 SARI cases admitted to ICU required ventilation (Table 7).

Of 696 SARI cases with confirmed influenza virus infection for which the vaccination status was available, 226 (32.5%) had been vaccinated against influenza (Table 8).

Table 4: Cumulative number of SARI cases, weeks 40/2011–14/2012

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	7		3		
France	298		40		
United Kingdom	194	0.33			59255492
Spain	588		41		
Belgium	253		7		
Slovakia	27	0.5			5440078
Romania	318	5.47	6	0.1	5813728
Total	**1685**		**97**		

Figure 7: Number of SARI cases by week of onset, weeks 40/2011–14/2012

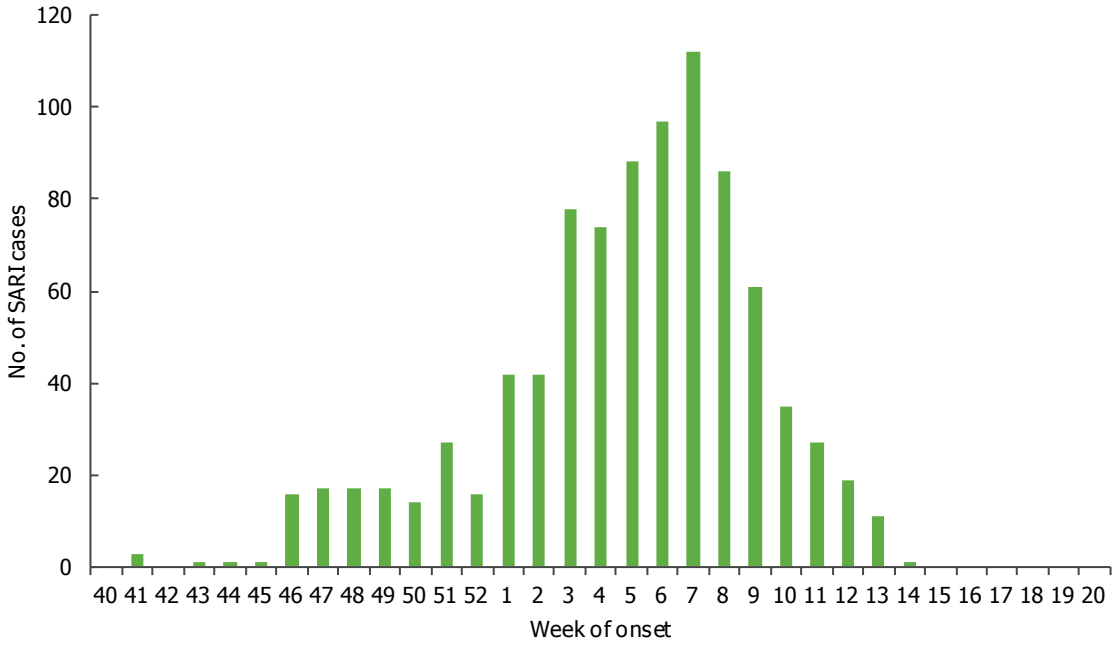


Table 5: Number of SARI cases by age and gender, weeks 40/2011–14/2012

Age groups	Male	Female	Unknown
Under 2	163	113	1
2-17	148	107	3
18-44	70	73	3
45-59	102	85	3
>=60	318	289	3
Unknown	8	1	195
Total	**809**	**668**	**208**

Table 6: Number of SARI cases by influenza type and subtype and other pathogens, week 14/2012 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	3	1167
A(H1)pdm09		41
A(H3)	2	695
A(subtyping not performed)	1	431
Influenza B		42
Other pathogen		6
Unknown	16	470
Total	**19**	**1685**

Table 7: Number of SARI cases by level of care and respiratory support, weeks 40/2011–14/2012

Respiratory support	ICU	In-patient ward	Other	Unknown
No respiratory support necessary	57	124		206
Oxygen therapy	23	74		35
Respiratory support given unknown	389	9	326	79
Ventilator	272			12

Table 8: Number of influenza related SARI cases by influenza vaccination status, weeks 40/2011–14/2012

Vaccination status	No. of influenza cases	Percentage of cases
Seasonal vaccination	159	13.2
Vaccinated for A(H1N1)pdm09	9	0.7
Fully vaccinated for seasonal & A(H1N1)pdm09	58	4.8
Not vaccinated	470	38.9
Unknown	513	42.4
TOTAL	**1209**	

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.