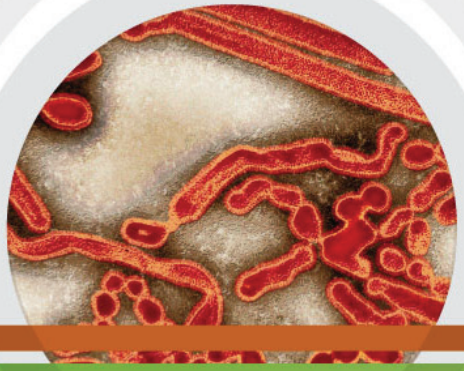


SURVEILLANCE REPORT

Weekly influenza surveillance overview

20 April 2012

Main surveillance developments in week 15/2012 (9–15 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 has been declining in an increasing number of countries since around week nine. The following points are noteworthy this week:

- Decreasing trends were reported by 14 countries, thirteen of which have been doing so for at least two consecutive weeks.
- Of 302 sentinel specimens tested, 29.1% were positive for influenza virus. This proportion has decreased for seven consecutive weeks from a peak of nearly 60% in week eight.
- Of 88 positive sentinel specimens, 30 (34.1%) were type B. This proportion has been steadily rising.
- Since week 40/2011, 1 710 SARI cases, including 101 fatalities, have been reported by seven countries. Of these cases, most were influenza-related.

The decrease in the proportion of influenza-positive sentinel specimens, together with the fact that the majority of countries are reporting a continuously decreasing incidence of ILI or ARI, indicate that the seasonal peak has passed in almost all European countries. However, the proportion of positive specimens indicates that influenza is still circulating in Europe and that B viruses are making an increasingly important contribution.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Low intensity was reported by 23 of 26 countries. For more information, **click here**.

Virological surveillance: Of 88 sentinel specimens testing positive for influenza virus, 58 (65.9%) were type A and 30 (34.1%) type B. For more information, **click here**.

Hospital surveillance of severe acute respiratory infection (SARI): Since week 40/2011, seven countries have reported 1 710 SARI cases, most of which were related to influenza infection. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

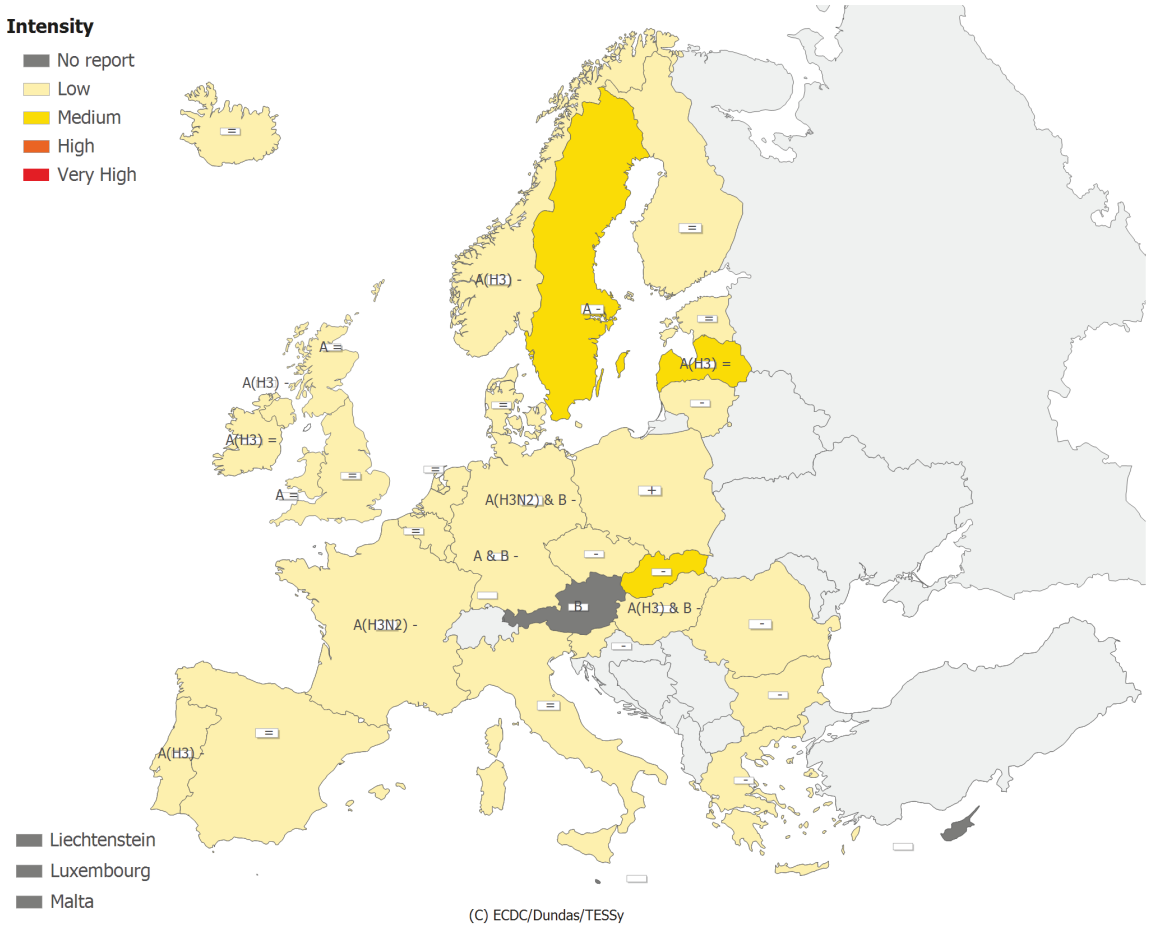
Weekly analysis – epidemiology

During week 15/2012, 26 countries reported clinical data. Low intensity was reported by 23 countries and medium intensity by three. This is the fourth week with no country reporting high intensity (Table 1, Map 1). Twenty-two countries have reported low intensity for at least two consecutive weeks.

Geographic spread was reported as widespread by Estonia and Sweden, regional by Latvia, local by 10 countries and sporadic by nine, with four reporting no activity (Table 1, Map 2).

Poland reported an increasing trend in clinical activity after two weeks of decreasing trends. Overall, decreasing trends were reported by 14 countries (Table 1, Map 2), 13 of which have been doing 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 15/2012

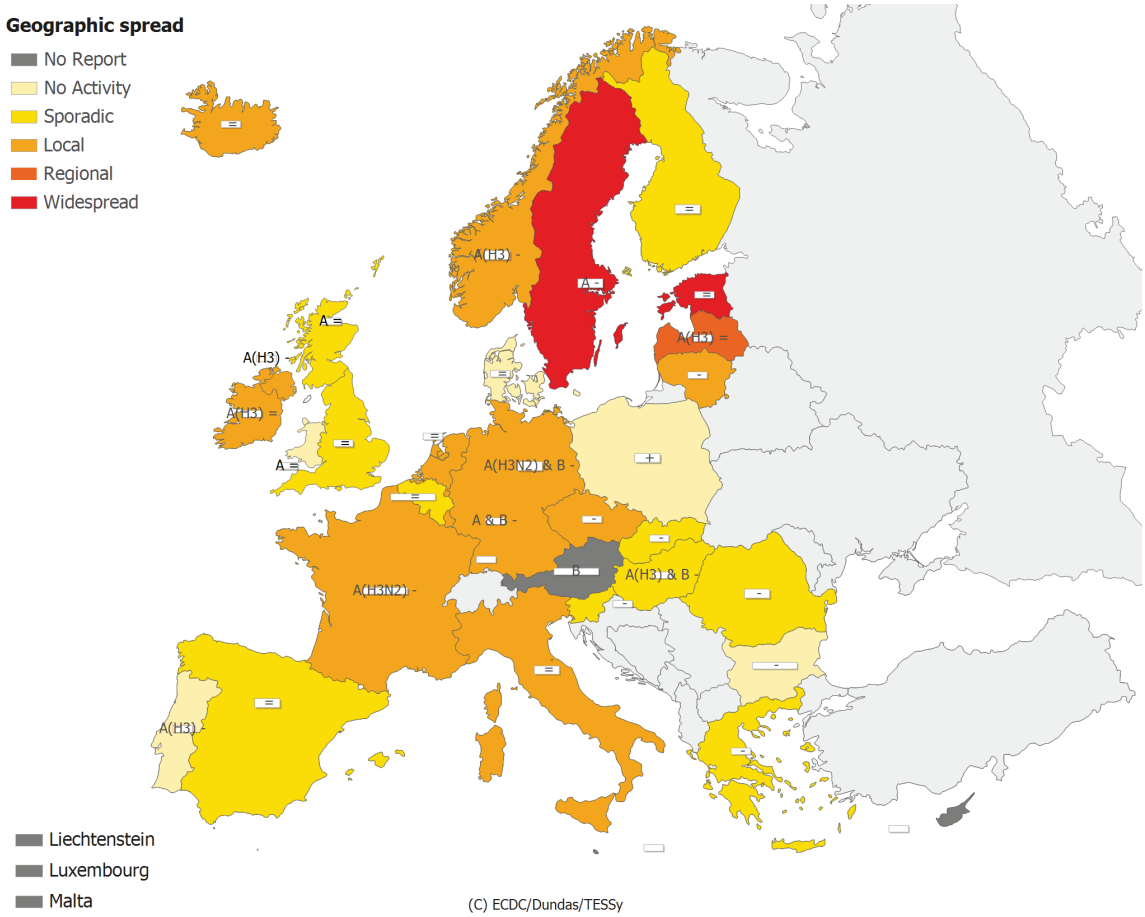


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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 & B**	Type A and B
		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 15/2012



* 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 & B	Type A and B
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 15/2012

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	B	0.0	-	-	Graphs	Graphs
Belgium	Low	Sporadic	Stable	4	-	25.0	39.0	1198.0	Graphs	Graphs
Bulgaria	Low	No activity	Decreasing	1	None	0.0	-	466.5	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	Local	Decreasing	11	None	18.2	45.0	882.9	Graphs	Graphs
Denmark	Low	No activity	Stable	1	None	0.0	24.5	-	Graphs	Graphs
Estonia	Low	Widespread	Stable	27	-	40.7	10.7	287.5	Graphs	Graphs
Finland	Low	Sporadic	Stable	6	None	16.7	-	-	Graphs	Graphs
France	Low	Local	Decreasing	46	A(H3N2)	32.6	-	1121.7	Graphs	Graphs
Germany	Low	Local	Decreasing	46	A(H3N2) & B	41.3	-	854.2	Graphs	Graphs
Greece	Low	Sporadic	Decreasing	4	-	25.0	69.5	-	Graphs	Graphs
Hungary	Low	Sporadic	Decreasing	15	A(H3) & B	46.7	50.6	-	Graphs	Graphs
Iceland	Low	Local	Stable	-	-	0.0	9.1	-	Graphs	Graphs
Ireland	Low	Local	Stable	8	A(H3)	0.0	11.1	-	Graphs	Graphs
Italy	Low	Local	Stable	7	None	42.9	84.7	-	Graphs	Graphs
Latvia	Medium	Regional	Stable	1	A(H3)	0.0	91.0	1011.0	Graphs	Graphs
Lithuania	Low	Local	Decreasing	2	None	100.0	3.9	371.8	Graphs	Graphs
Luxembourg	Low	Local	Decreasing	10	A & B	50.0	-*	-*	Graphs	Graphs
Malta				-	-	0.0	-	-		
Netherlands	Low	Local	Stable	5	None	20.0	21.9	-	Graphs	Graphs
Norway	Low	Local	Decreasing	2	A(H3)	50.0	27.8	-	Graphs	Graphs
Poland	Low	No activity	Increasing	14	None	7.1	115.7	-	Graphs	Graphs
Portugal	Low	No activity	Decreasing	0	A(H3)	0.0	0.0	-	Graphs	Graphs
Romania	Low	Sporadic	Decreasing	13	None	7.7	2.1	518.4	Graphs	Graphs
Slovakia	Medium	Sporadic	Decreasing	1	None	100.0	177.6	1424.5	Graphs	Graphs
Slovenia	Low	Sporadic	Decreasing	1	None	0.0	1.2	668.6	Graphs	Graphs
Spain	Low	Sporadic	Stable	33	None	15.2	13.1	-	Graphs	Graphs
Sweden	Medium	Widespread	Decreasing	5	A	20.0	5.4	-	Graphs	Graphs
UK - England	Low	Sporadic	Stable	22	None	18.2	4.7	296.4	Graphs	Graphs
UK - Northern Ireland	Low	Local	Decreasing	4	A(H3)	50.0	15.4	212.7	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	12	A	25.0	12.3	474.3	Graphs	Graphs
UK - Wales	Low	No activity	Stable	1	A	100.0	5.4	-	Graphs	Graphs
Europe				**302**		**29.1**				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 15/2012, 26 countries reported virological data. Of 302 sentinel specimens tested, 88 (29.1%) were positive for influenza virus (Table 1, Figure 1), of which 58 (65.9%) were type A and 30 (34.1%) type B (Table 2). The proportion of B viruses has increased again (31.3%; updated data for week 14/2012) although the absolute numbers for both A and B detections are decreasing. This is the seventh consecutive week with decreases in both number of detections and proportion of positive sentinel specimens, indicating that the seasonal peak of influenza activity at the EU/EEA level has passed (Figure 1).

Of the 643 influenza viruses detected from sentinel and non-sentinel sources during week 15/2012, 552 (85.8%) were type A and 91 (14.2%) were type B. Of the 162 influenza A viruses subtyped, 152 (93.8%) were A(H3) and 10 (6.2%) were A(H1)pdm09 (Table2).

Of the 31 314 influenza virus detections in sentinel and non-sentinel specimens since week 40/2011, 29 486 (94.2%) were type A and 1 828 (5.8%) were type B viruses. Of 13 938 influenza A viruses subtyped, 13 557 (97.3%) were A(H3) viruses and 381 (2.7%) were A(H1)pdm09 (Table 2, Figures 2 and 3). The lineage of 288 influenza B viruses has been determined: 163 (56.6%) were B-Victoria and 125 (43.4%) were B-Yamagata lineage (Table 2).

Since week 40/2011, 1 538 antigenic characterisations of viruses have been reported, of which 1 244 (80.9%) were A/Perth/16/2009 (H3N2)-like (Figure 4).

Since week 40/2011, 1 086 genetic characterisations of viruses have been reported, 950 (87.5%) of which were A(H3) viruses. Of the latter, 617 (64.9%) 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 February report prepared by the Community Network of Reference Laboratories (CNRL) coordination team.

Between week 40/2011 and week 15/2012, antiviral susceptibility data was reported from 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 15/2012, 14 countries reported 265 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 40/2011–15/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	58	494	8070	21416
A(H1)pdm09	1	9	91	290
A(H3)	29	123	7110	6447
A(subtyping not performed)	28	362	869	14679
Influenza B	30	61	869	959
B(Vic) lineage	9	2	102	61
B(Yam) lineage	3	5	66	59
Unknown lineage	18	54	701	839
Total influenza	**88**	**555**	**8939**	**22375**

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 40/2011–15/2012

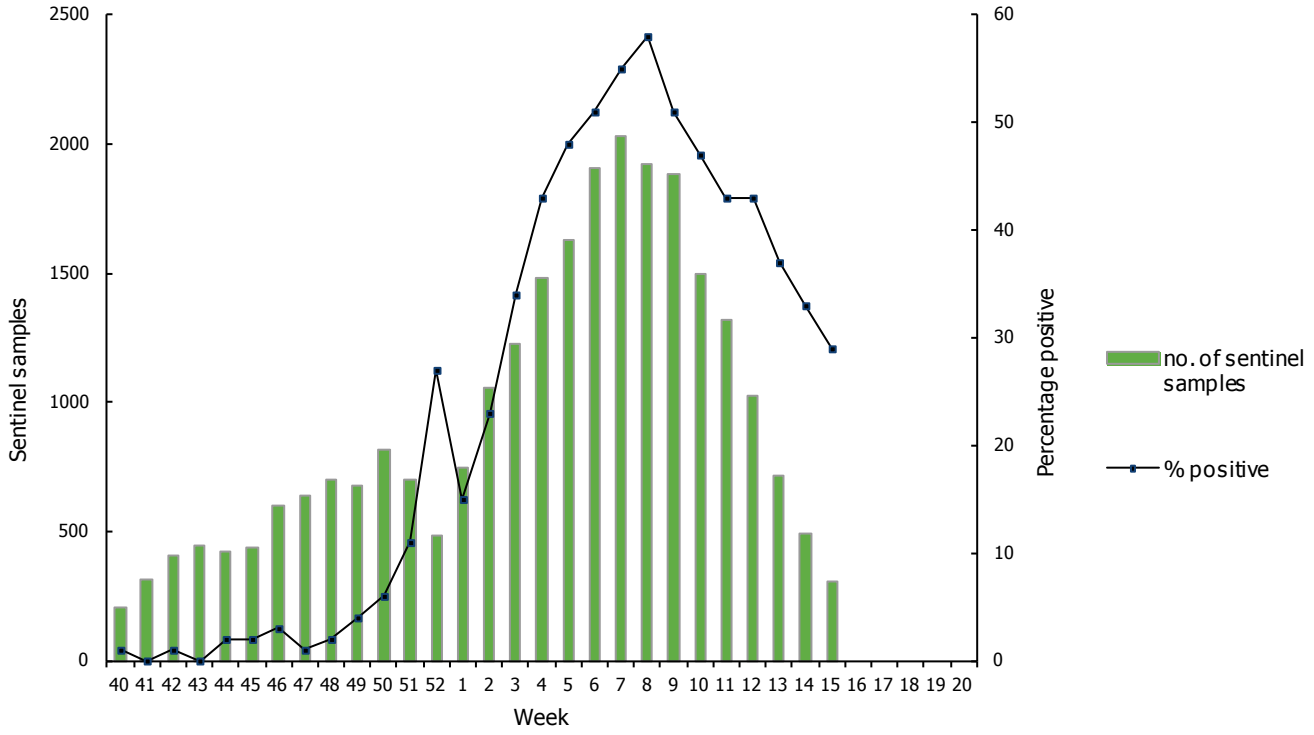


Figure 2: Number of sentinel specimens positive for influenza virus, by type, subtype and week of report, weeks 40/2011–15/2012

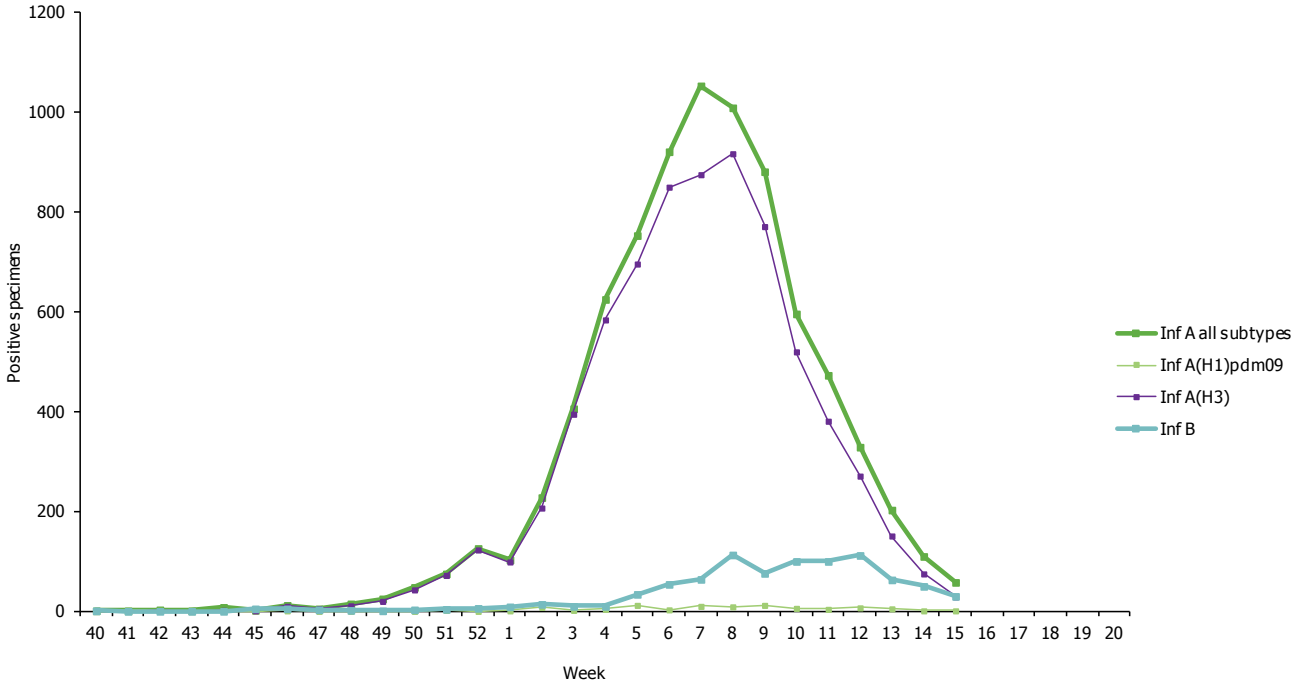


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2011–15/2012

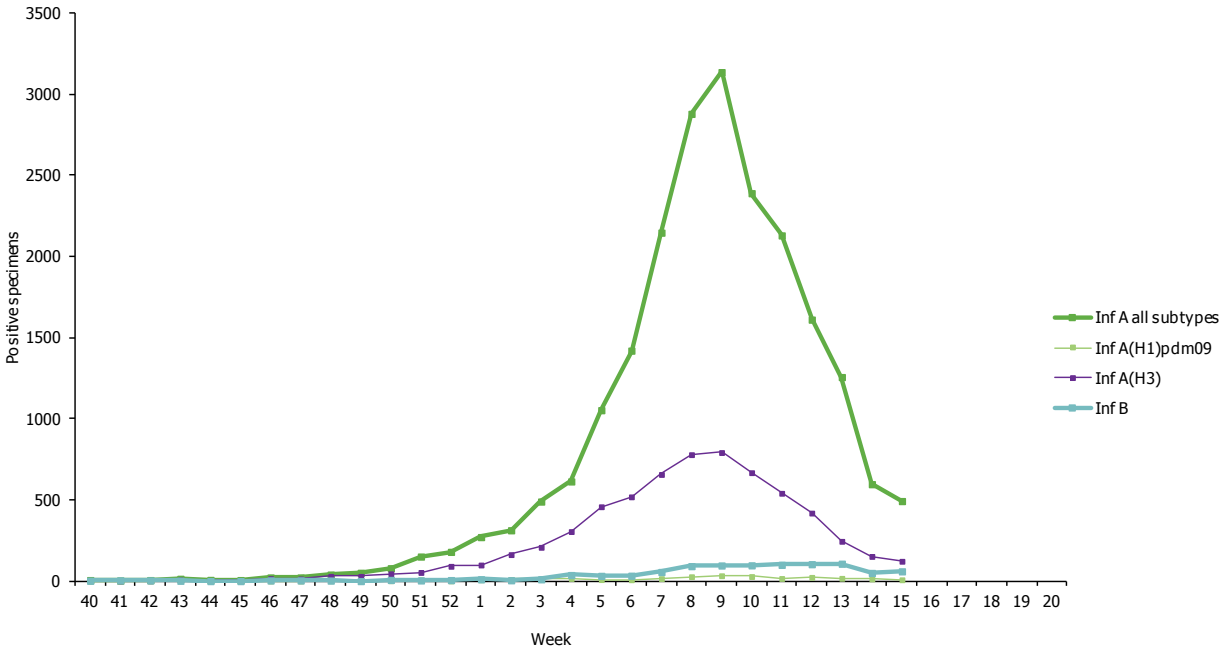


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–15/2012

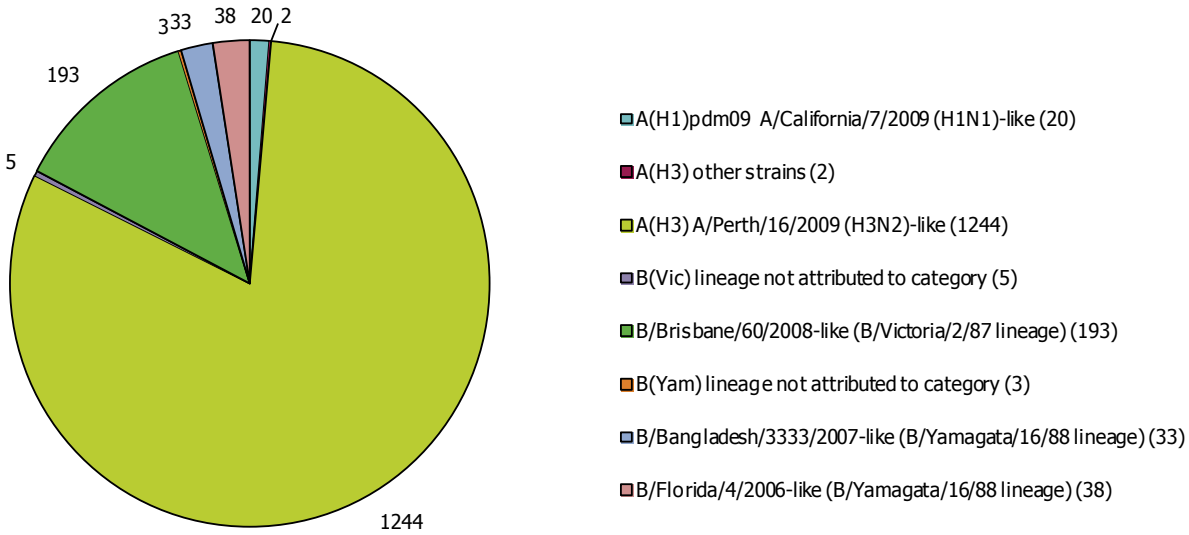


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–15/2012

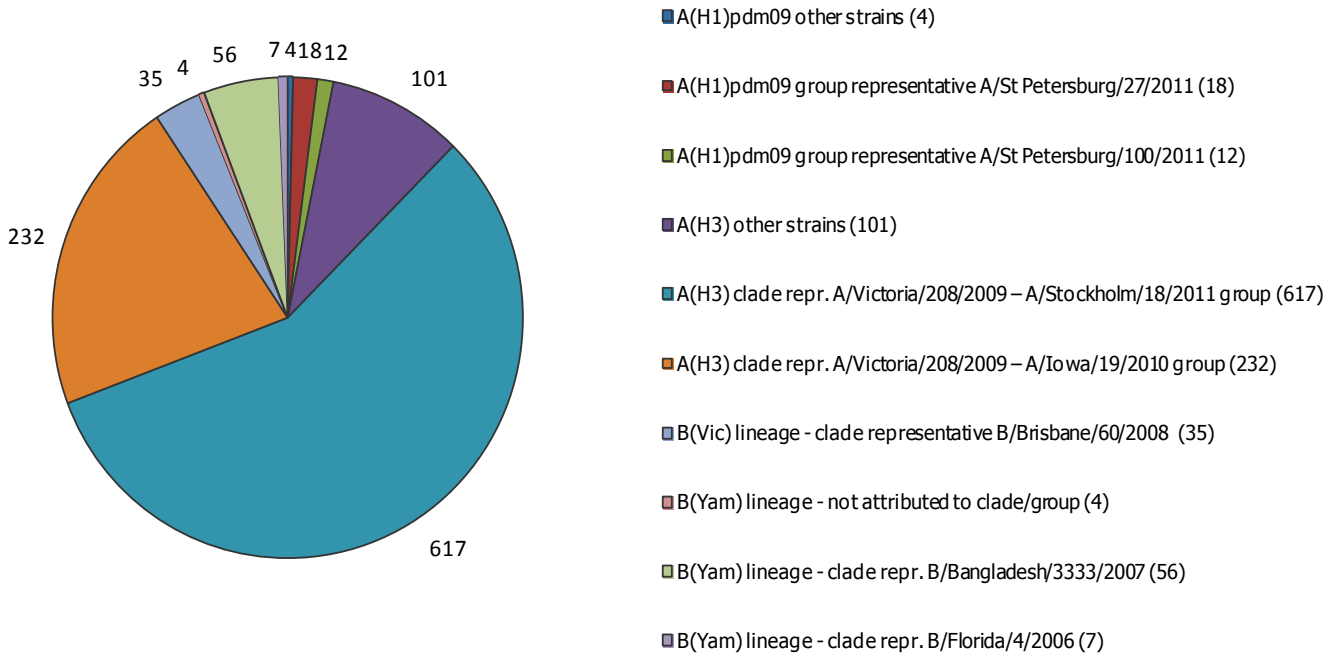
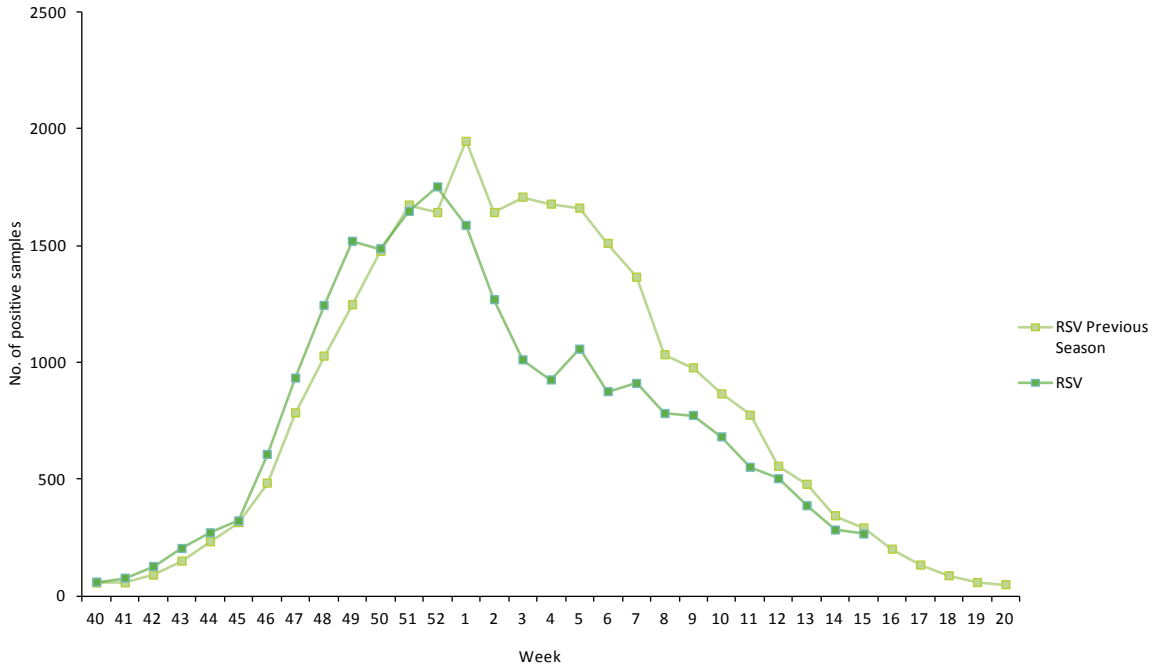


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2011–15/2012

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)	455	0	447	0	98	98 (100%)
A(H1N1)pdm09	32	0	32	0	7	7 (100%)
B	37	0	36	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). Data should therefore be interpreted in this context.*

Figure 6: Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2011–15/2012



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 1 710 SARI cases, including 101 fatalities, have been reported by seven countries (Table 4 and Figure 7). Ninety-one (90.1%) of the fatal cases were influenza-related and 95 were from Belgium, France, Ireland and Spain (Table 4) which report only severe influenza-related disease. Such a high case fatality rate is not unusual for influenza-infected patients ill enough to be hospitalised in a year dominated by A(H3N2). Significant excess all-cause mortality in people aged 65 years and older has been reported from some, but not all countries (See link: Mazick et al, Eurosurveillance)

Of 1 502 patients for whom information was available, 822 (54.7%) were male (Table 5).
Of 10 SARI cases reported in week 15/2012, two were known to be related to influenza virus infection, of which one was of the A(H3) subtype (Table 6).

Of the 1 226 influenza-related cases reported since week 40/2011, 1 183 (96.5%) were caused by type A viruses; of these, 751 have been subtyped, revealing that 709 (94.4%) were associated with A(H3) infection and 42 (5.6%) with A(H1)pdm09 (Table 6).

Since week 40/2011, at least 279 (37.1%) of 752 SARI cases admitted to ICU required ventilation (Table 7).
Of 708 SARI cases with confirmed influenza virus infection for which the vaccination status was available, 220 (31.1%) were vaccinated against seasonal influenza (Table 8).

Table 4: Cumulative number of SARI cases, weeks 40/2011–15/2012

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
Romania	327	5.62	6	0.1	5813728
Slovakia	27	0.5			5440078
Ireland	7		3		
France	306		42		
United Kingdom	194	0.33			59255492
Spain	596		43		
Belgium	253		7		
Total	**1710**		**101**		

Figure 7: Number of SARI cases by week of onset, weeks 40/2011–15/2012

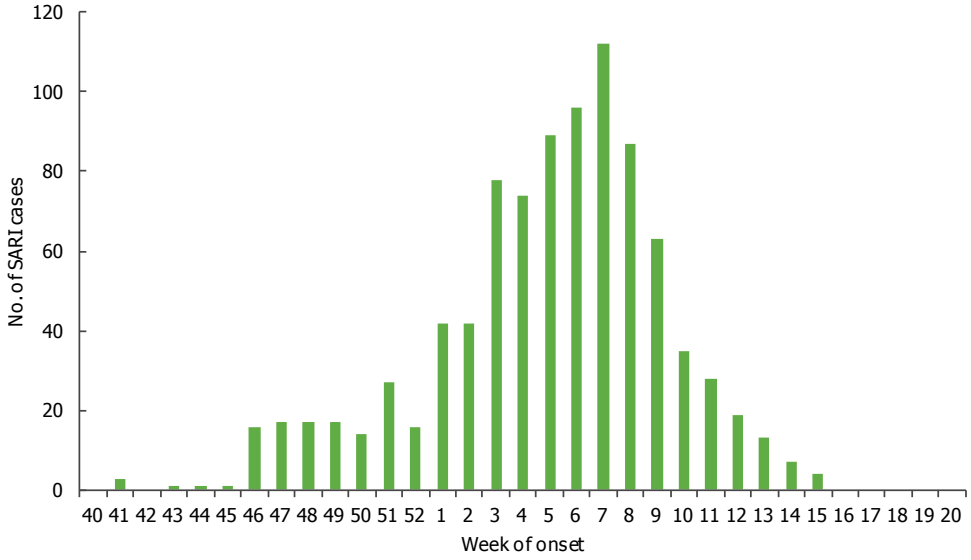


Table 5: Number of SARI cases by age and gender, weeks 40/2011–15/2012

Age groups	Male	Female	Unknown
Under 2	166	117	1
2-17	152	109	3
18-44	70	74	3
45-59	103	85	3
>=60	323	293	3
Unknown	8	2	195
Total	**822**	**680**	**208**

Table 6: Number of SARI cases by influenza type and subtype and other pathogens, week 15/2012 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	2	1183
A(H1)pdm09		42
A(H3)	1	709
A(sub-typing not performed)	1	432
Influenza B		43
Other pathogen		6
Unknown	8	478
Total	**10**	**1710**

Table 7: Number of SARI cases by level of care and respiratory support, weeks 40/2011–15/2012

Respiratory support	ICU	In-patient ward	Other	Unknown
No respiratory support necessary	58	124		206
Oxygen therapy	23	74		35
Respiratory support given unknown	392	9	331	79
Ventilator	279			12

Table 8: Number of influenza related SARI cases by influenza vaccination status, weeks 40/2011–15/2012

Vaccination status	No. of influenza cases	Percentage of cases
Seasonal vaccination	161	13.1
Vaccinated for A(H1N1)pdm09	9	0.7
Fully vaccinated for seasonal & A(H1N1)pdm09	59	4.8
Not vaccinated	479	39.1
Unknown	518	42.3
TOTAL	**1226**	

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.