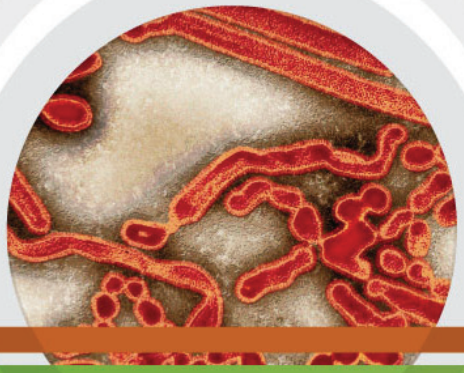


SURVEILLANCE REPORT

Weekly influenza surveillance overview

24 February 2012

Main surveillance developments in week 7/2012 (13–19 February 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 started later than in recent seasons and has been without any clear geographic progression.
- Medium or high intensity was reported by 18 countries and increasing trends by 19 countries.
- Of 1 873 sentinel specimens tested, 927 (49.5%) were positive for influenza virus, which is a similar percentage to that observed during the two previous weeks.
- Of the 2 901 influenza viruses detected from sentinel and non-sentinel sources during week 7/2012, 96.1% were type A and 3.9% were type B. Of the 1 085 influenza A viruses subtyped, 98.2% were A(H3) and 1.8% were A(H1)pdm09.
- No resistance to the neuraminidase inhibitors (oseltamivir and zanamivir) has been reported so far this season.
- The influenza A(H3) and B viruses circulating this season have moved genetically and antigenically away from 2011–2012 seasonal vaccine viruses. This prompted WHO to recommend different vaccine viruses for the 2012-2013 seasonal vaccine.
- The national influenza season epidemics in Europe may be approaching their peak in the first affected countries and remain dominated by A(H3) viruses.

Sentinel surveillance of influenza-like illness (ILI)/acute respiratory infection (ARI): Medium or high intensity was reported by 18 countries and increasing trends by 19 countries. For more information, **click here**.

Virological surveillance: Of 927 sentinel specimens testing positive for influenza virus, 867 (93.5%) were type A and 60 (6.5%) were type B. For more information, **click here**.

Hospital surveillance of severe acute respiratory infection (SARI): Since week 40/2011, five countries have reported 611 SARI cases, 393 (64.3%) of which were related to influenza infection. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

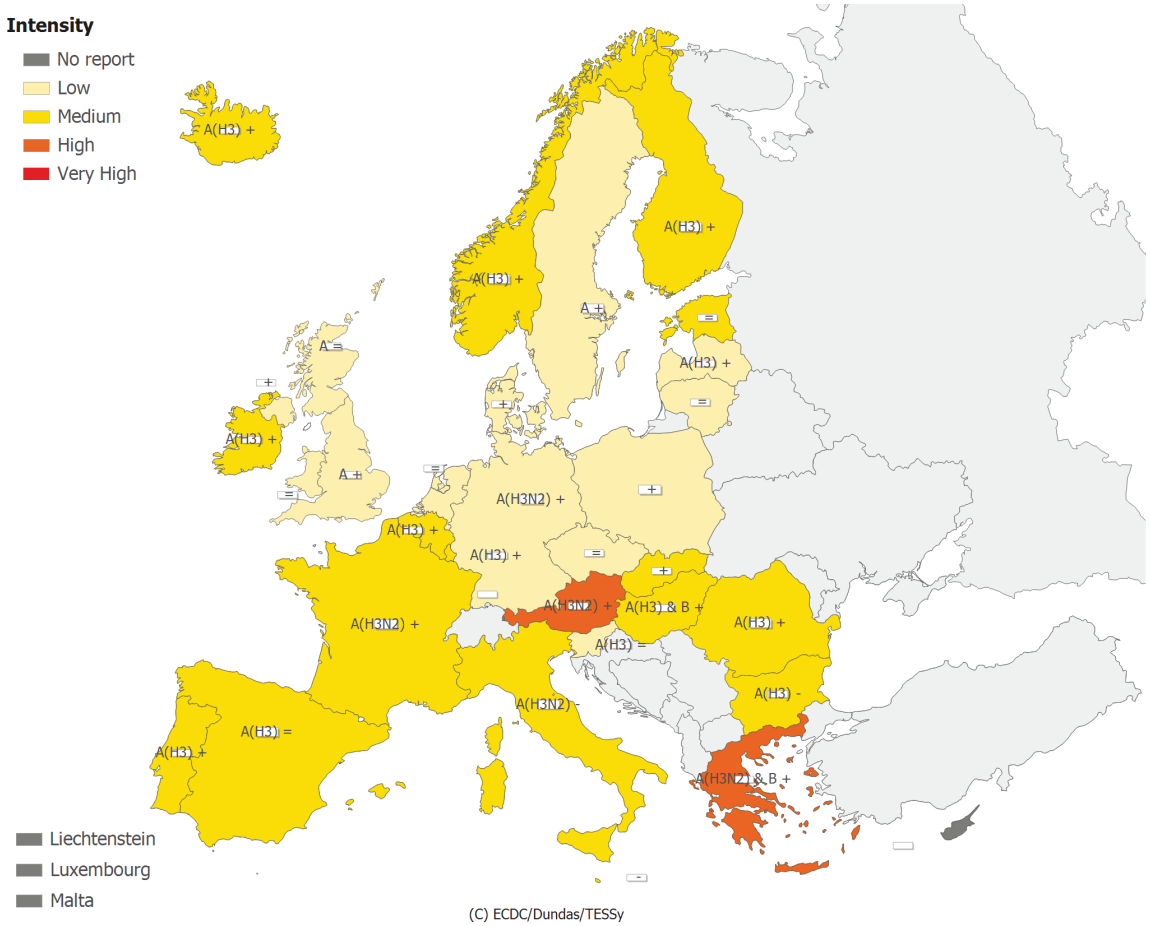
Weekly analysis – epidemiology

During week 7/2012, 28 countries reported clinical data. Low activity was reported by 10 countries. Medium intensity was reported by 16 countries, which is three more than in week 6/2012 (Table 1, Map 1). Both Austria and Greece reported high intensity. Italy and Spain have reported medium intensity for six consecutive weeks and eleven countries have reported medium intensity for at least three consecutive weeks.

Geographic spread was reported as widespread by 11 countries (Austria, Belgium, Estonia, France, Greece, Hungary, Italy, Norway, Portugal, Slovenia and Spain), regional by six, local by four, and sporadic by six. One country (Poland) reported no activity (Table 1, Map 2).

Increasing trends in clinical activity were reported by 19 countries, while stable trends were reported by six countries and decreasing trends by three countries (Bulgaria, Malta and Italy) (Table 1, Map 2). Bulgaria and Italy have reported decreasing trends for two consecutive weeks, suggesting that their influenza seasons have peaked.

Map 1: Intensity for week 7/2012



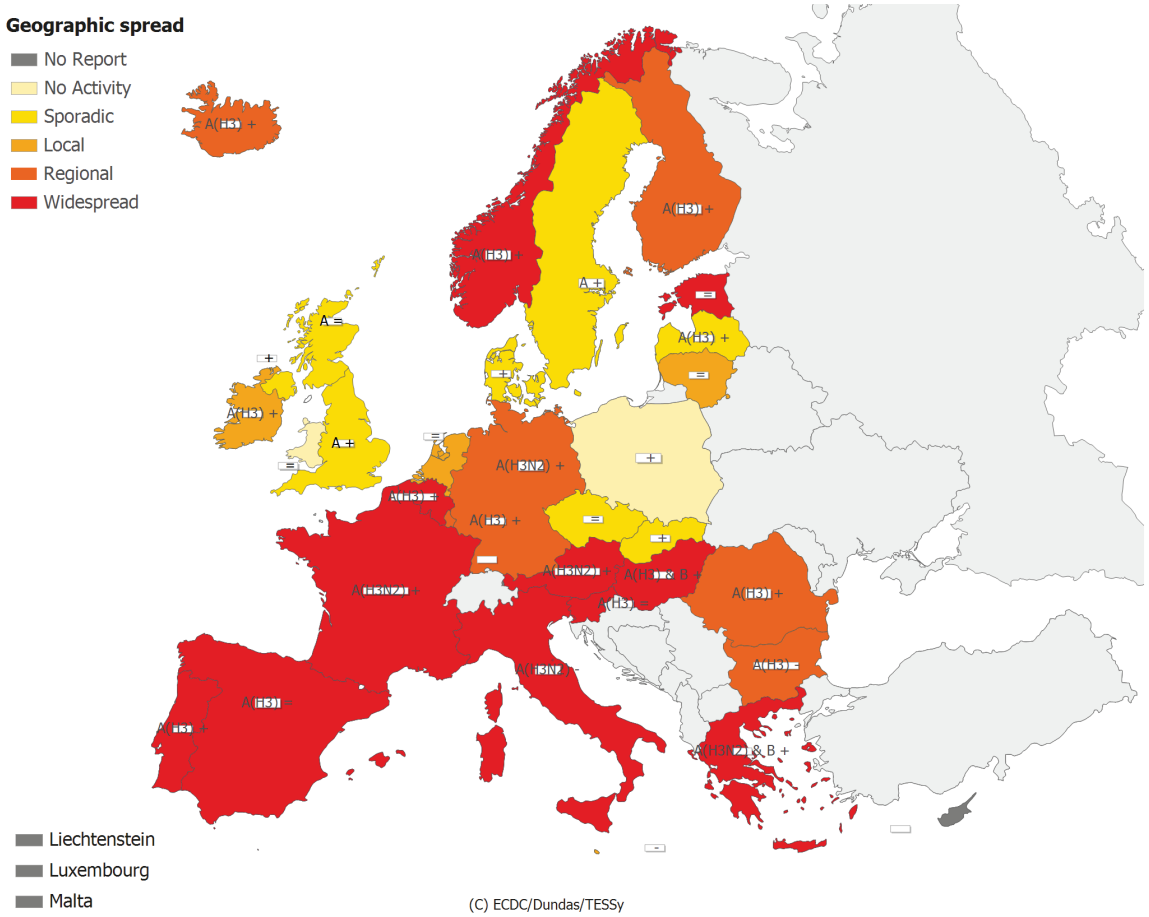
(C) ECDC/Dundas/TESSy

* 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	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 7/2012



* 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 7/2012

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	High	Widespread	Increasing	51	A(H3N2)	62.7	27.3	-	Graphs	Graphs
Belgium	Medium	Widespread	Increasing	114	A(H3)	71.1	586.9	2725.5	Graphs	Graphs
Bulgaria	Medium	Regional	Decreasing	0	A(H3)	0.0	-	1304.2	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	Sporadic	Stable	20	None	10.0	43.6	953.8	Graphs	Graphs
Denmark	Low	Sporadic	Increasing	6	None	50.0	67.5	-	Graphs	Graphs
Estonia	Medium	Widespread	Stable	17	-	35.3	10.7	179.8	Graphs	Graphs
Finland	Medium	Regional	Increasing	91	A(H3)	51.6	-	-	Graphs	Graphs
France	Medium	Widespread	Increasing	244	A(H3N2)	56.6	-	2610.4	Graphs	Graphs
Germany	Low	Regional	Increasing	98	A(H3N2)	29.6	-	1407.1	Graphs	Graphs
Greece	High	Widespread	Increasing	49	A(H3N2) & B	71.4	368.4	-	Graphs	Graphs
Hungary	Medium	Widespread	Increasing	57	A(H3) & B	42.1	209.1	-	Graphs	Graphs
Iceland				0	A(H3)	0.0	-	-	Graphs	Graphs
Ireland	Medium	Local	Increasing	23	A(H3)	56.5	32.9	-	Graphs	Graphs
Italy	Medium	Widespread	Decreasing	146	A(H3N2)	52.1	706.5	-	Graphs	Graphs
Latvia	Low	Sporadic	Increasing	1	A(H3)	0.0	10.2	1370.2	Graphs	Graphs
Lithuania	Low	Local	Stable	0	None	0.0	2.3	357.8	Graphs	Graphs
Luxembourg	Medium	Regional	Increasing	31	A(H3)	41.9	-*	-*	Graphs	Graphs
Malta				7	None	0.0	-*	-*	Graphs	Graphs
Netherlands	Low	Local	Stable	23	None	21.7	47.3	-	Graphs	Graphs
Norway	Medium	Widespread	Increasing	25	A(H3)	64.0	152.2	-	Graphs	Graphs
Poland	Low	No activity	Increasing	25	None	0.0	148.7	-	Graphs	Graphs
Portugal	Medium	Widespread	Increasing	11	A(H3)	63.6	78.6	-	Graphs	Graphs
Romania	Medium	Regional	Increasing	30	A(H3)	76.7	4.2	885.0	Graphs	Graphs
Slovakia	Medium	Sporadic	Increasing	3	None	0.0	257.8	1982.6	Graphs	Graphs
Slovenia	Low	Widespread	Stable	25	A(H3)	56.0	32.1	1265.2	Graphs	Graphs
Spain	Medium	Widespread	Stable	557	A(H3)	52.4	251.7	-	Graphs	Graphs
Sweden	Low	Sporadic	Increasing	104	A	38.5	18.6	-	Graphs	Graphs
UK - England	Low	Sporadic	Increasing	86	A	32.6	20.2	477.0	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Increasing	1	-	100.0	30.6	510.0	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	27	A	7.4	11.0	546.8	Graphs	Graphs
UK - Wales	Low	No activity	Stable	1	-	0.0	5.1	-	Graphs	Graphs
Europe				1873		49.5				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 7/2012, 28 countries reported virological data. Of 1 873 sentinel specimens tested, 927 (49.5%) were positive for influenza virus (Table 1, Figure 1), with 93.5% type A and 6.5% type B (Table 2). In 13 countries, percentages of positive specimens exceeded 50%.

Of the 2 901 influenza viruses detected from sentinel and non-sentinel sources during week 7/2012, 2 788 (96.1%) were type A and 113 (3.9%) were type B. Of the 1 085 influenza A viruses subtyped, 1 065 (98.2%) were A(H3) and 20 (1.8%) were A(H1)pdm09 (Table2).

Of the 11 159 influenza virus detections in sentinel and non-sentinel specimens since week 40/2011, 10 702 (95.9%) were type A and 457 (4.1%) were type B viruses. Of 6 238 influenza A viruses subtyped, 6 083 (97.5%) were A(H3) viruses and 155 (2.5%) were A(H1)pdm09 (Table 2, Figures 2 & 3). The lineage of 38 influenza B viruses has been determined: 24 (63.2%) were B-Victoria and 14 (36.8%) were B-Yamagata lineage (Table 2).

Since week 40/2011, 215 antigenic characterisations of viruses have been reported, of which 193 (89.8%) were A/Perth/16/2009 (H3N2)-like (Figure 4).

Since week 40/2011, 493 genetic characterisations of viruses have been reported with 429 (87.0%) of these being A(H3) viruses, of which 285 (57.8%) 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.

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

The WHO Consultation on the Composition of Influenza Virus Vaccines for the Northern Hemisphere 2012–2013 season took place this week and made a recommendation that can be found here.

Between week 40/2011 and week 7/2012, 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 to either oseltamivir or zanamivir. All A(H1N1)pdm09 and A(H3N2) viruses screened for M2 blocker susceptibility were resistant (Table 3).

No zoonotic influenza virus 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 7/2012, 17 countries reported 776 respiratory syncytial virus (RSV) detections (Figure 6). The number of RSV detections has been decreasing since week 52/2011.

Table 2: Weekly and cumulative influenza virus detections by type, sub-type and surveillance system, weeks 40/2011–7/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	867	1921	4205	6497
A(H1)pdm09	7	13	42	113
A(H3)	625	440	3709	2374
A(sub-typing not performed)	235	1468	454	4010
Influenza B	60	53	220	237
B(Vic) lineage	5	4	13	24
B(Yam) lineage	2	4	12	14
Unknown lineage	53	45	195	199
Total influenza	**927**	**1974**	**4425**	**6734**

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 40/2011–7/2012

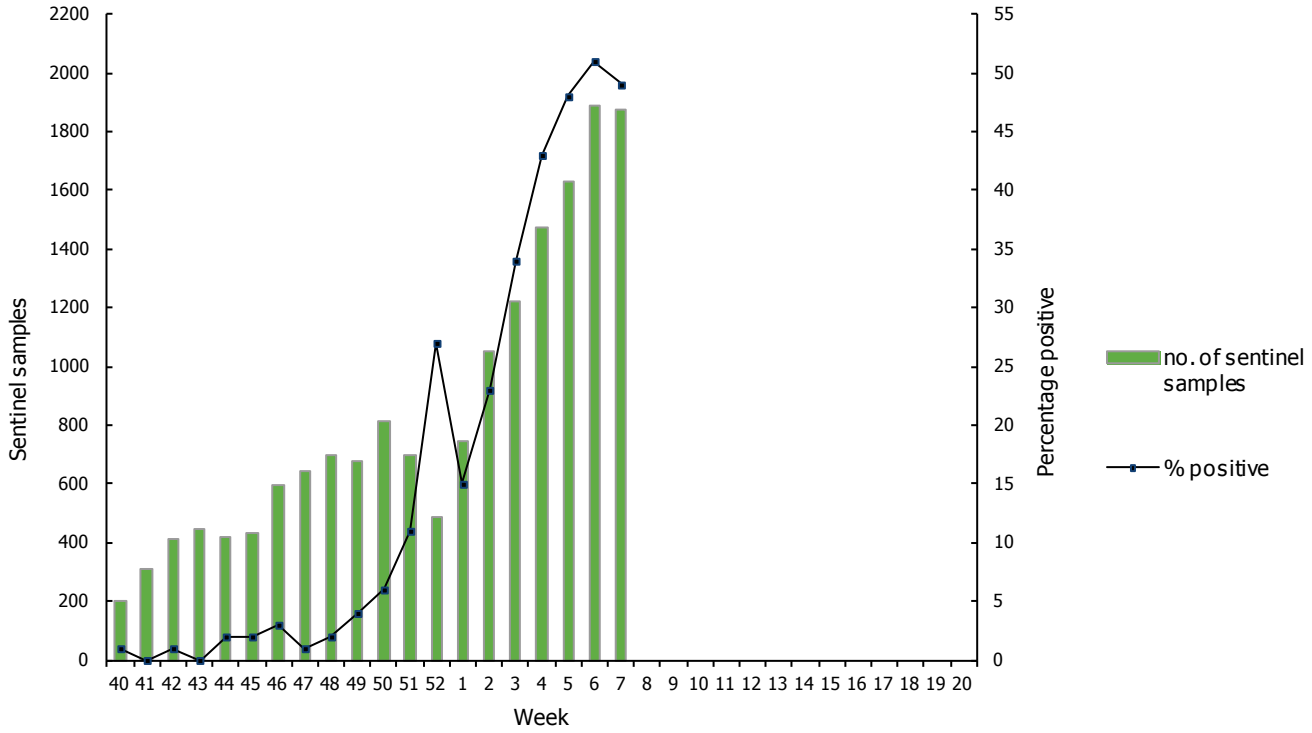


Figure 2: Number of sentinel specimens positive for influenza virus, by type, sub-type and week of report, weeks 40/2011–7/2012

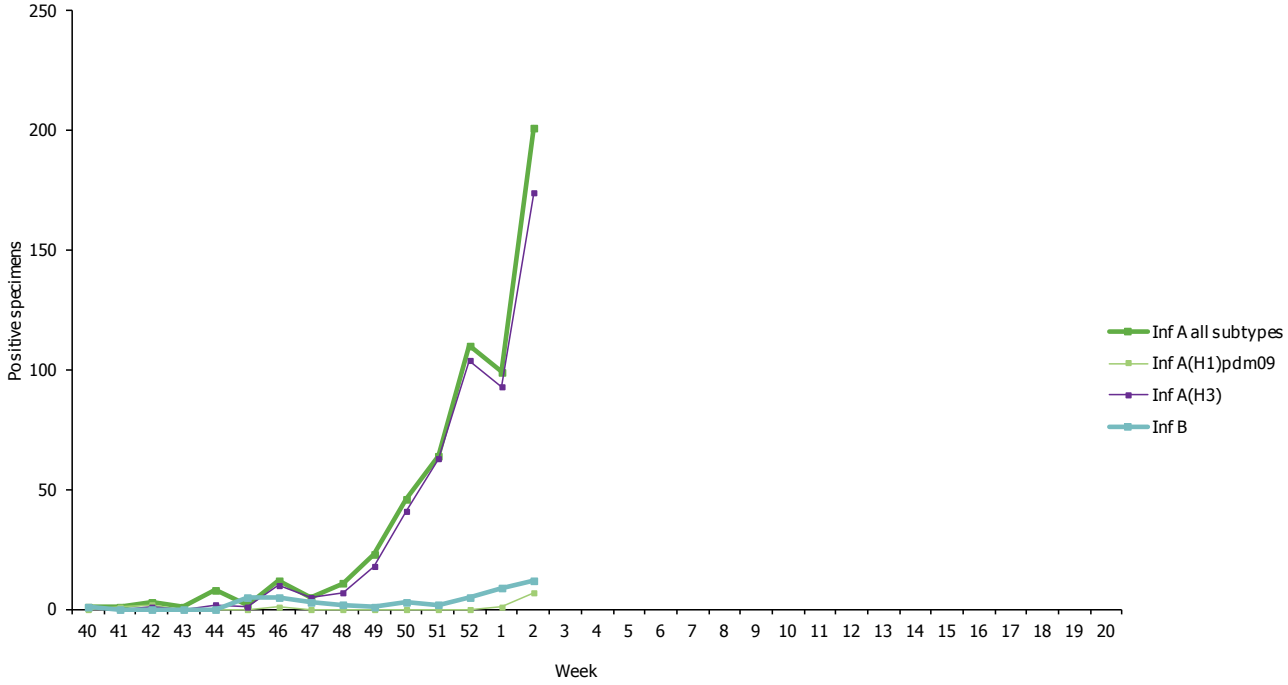


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, sub-type and week of report, weeks 40/2011–7/2012

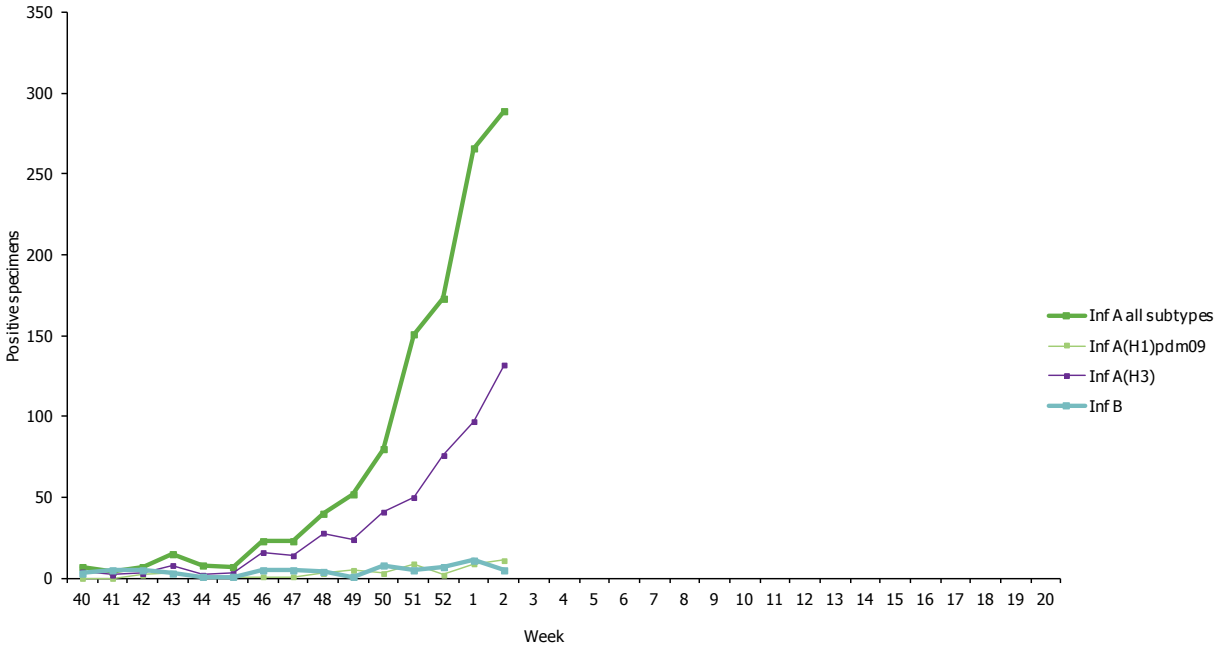


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–7/2012

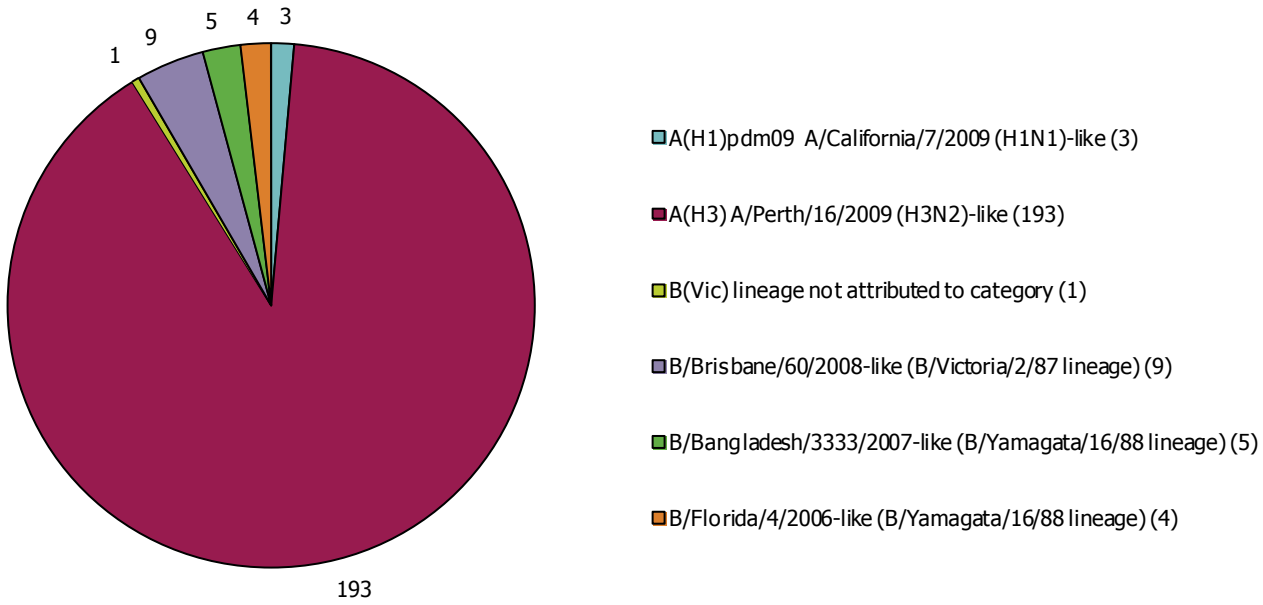


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–7/2012

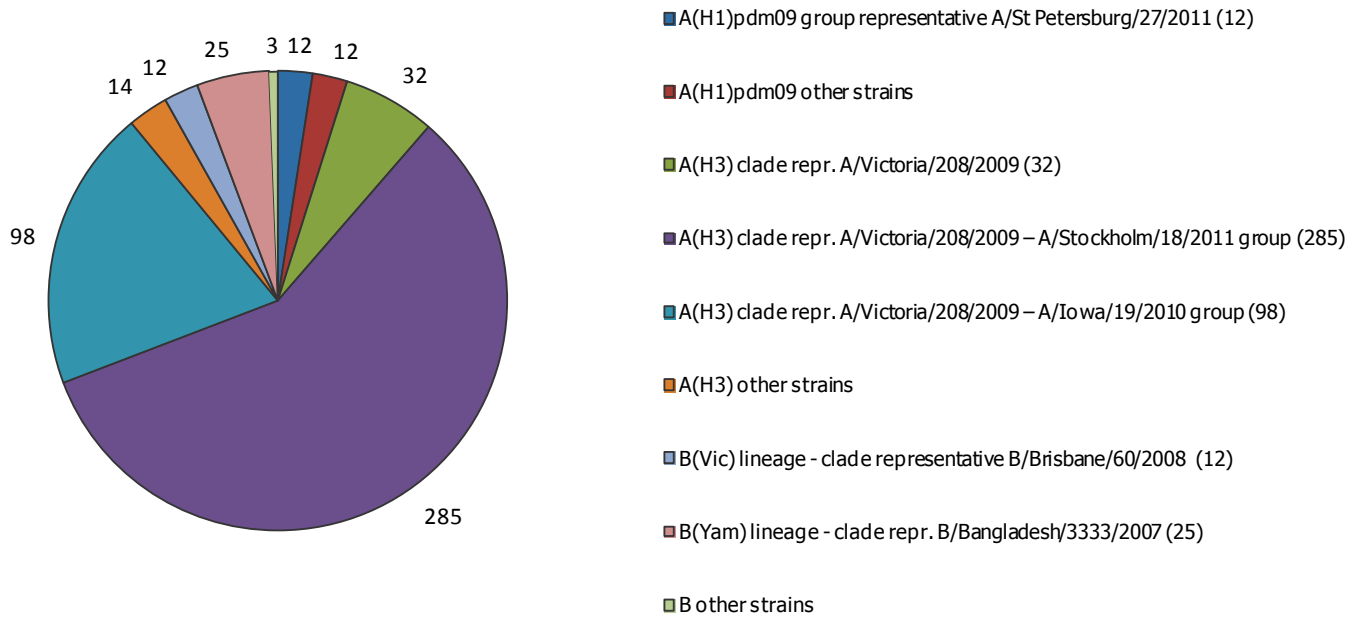
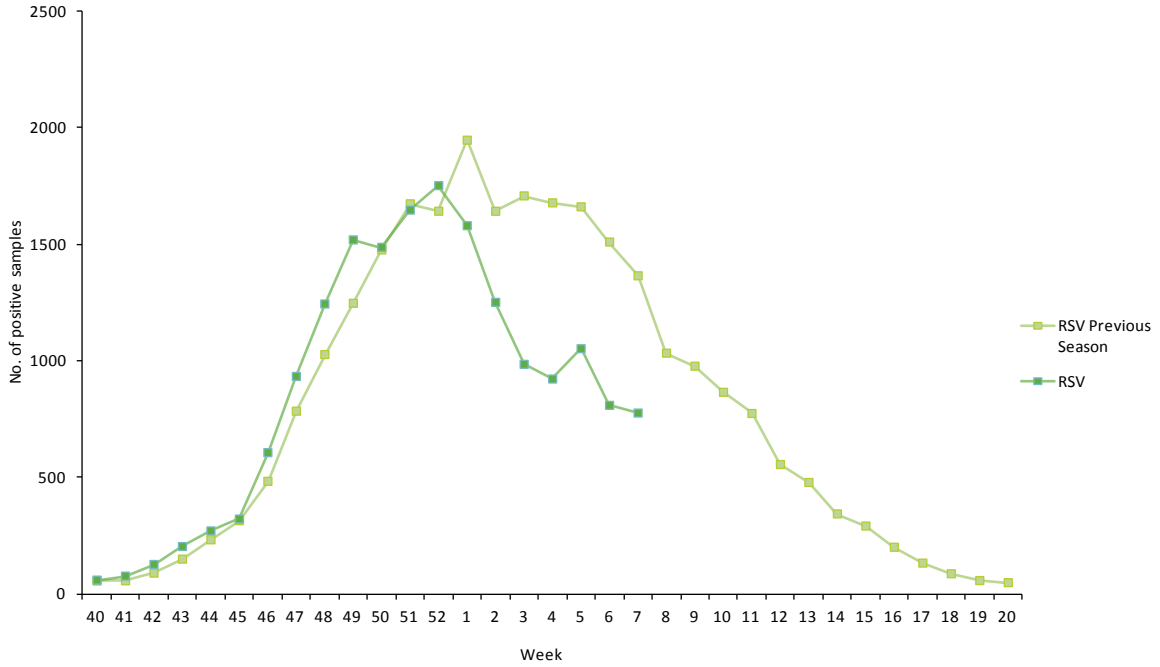


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2011–7/2012

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)2009	22	0	22	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 40/2011–7/2012



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 northern hemisphere season vaccine preparation click here.

Hospital surveillance – severe influenza disease

Weekly analysis of severe acute respiratory infection – SARI

Since week 40/2011, a total of 611 SARI cases and 23 fatalities have been reported by six countries (Table 4 and Figure 7). Of 548 patients for whom information was available, 305 (55.7%) were male (Table 5).

Of 51 SARI cases reported in week 7/2012, 39 were related to influenza virus infection, of which 22 were of the A(H3) subtype (Table 6).

Of the 611 cumulative cases since week 40/2011, 393 (64.3%) were influenza-related. Of these, 287 viruses have undergone typing and subtyping, revealing that 252 (87.8%) were associated with A(H3) infection, 20 (7.0%) with A(H1N1)pdm09 and 15 (5.2%) with type B (Table 6).

Of 246 SARI cases for which the vaccination status was available, 170 (69.1%) were not vaccinated against influenza (Table 7).

Table 4: Cumulative number of SARI cases, weeks 40/2011–7/2012

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	13	0.24			5440078
France	47		3		
United Kingdom	62	0.1			59255492
Spain	255		13		
Romania	229	3.94	4	0.07	5813728
Ireland	5		3		
Total	**611**		**23**		

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

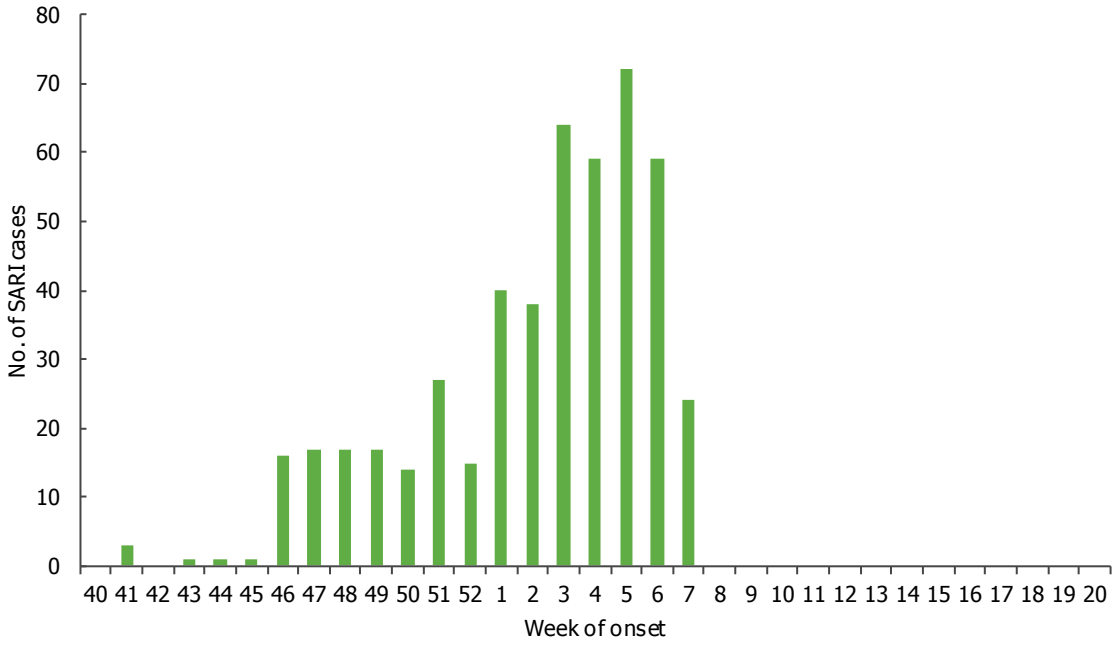


Table 5: Number of SARI cases by age and gender, weeks 40/2011–7/2012

Age groups	Male	Female	Unknown
2-17	72	56	1
Under 2	82	54	
18-44	27	34	
Unknown	2		62
45-59	36	24	
>=60	86	75	
Total	**305**	**243**	**63**

Table 6: Number of SARI cases by influenza type and subtype and other pathogens, week 7/2012 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	38	393
A(H1)pdm09		20
A(H1)		
A(H3)	22	252
A(sub-typing not performed)	16	121
Influenza B	1	15
Other pathogen		2
Unknown	12	201
Total	51	611

Table 7: Number of SARI cases by influenza vaccination status, weeks 40/2011–7/2012

Vaccination status	No. of influenza cases	Percentage of cases
Seasonal vaccination	38	9.3
Vaccinated for A(H1N1)2009	5	1.2
Fully vaccinated: seasonal & A(H1N1)2009	33	8.1
Not vaccinated	170	41.7
Unknown	162	39.7
TOTAL	**408**	

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.