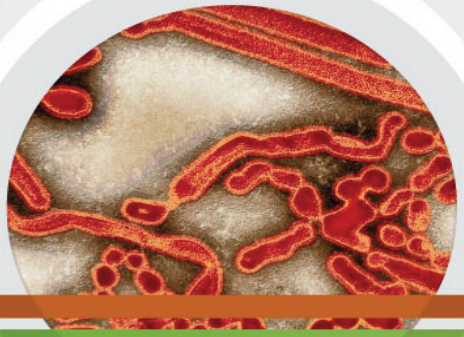


SURVEILLANCE REPORT

Weekly influenza surveillance overview

16 March 2012

Main surveillance developments in week 10/2012 (5 – 11 March 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 late and has been without any clear geographic progression. The following points are noteworthy this week:

- Medium or higher intensity has been reported in 20 countries, decreasing trends in ten countries and increasing trends in only three countries.
- Of 1 433 sentinel specimens tested, 43.2% were positive for influenza virus, the second decline in a row this year, suggesting that the peak of the epidemic at European level has passed. Of these sentinel viruses, 85.1% were type A and 14.9% were type B. This is the highest percentage of B viruses so far this season.
- Since week 40/2011, 1 238 SARI cases, including 51 fatalities, have been reported by seven countries. Of these cases, 873 were related to influenza infection – 97.4% with A viruses.
- No resistance to neuraminidase inhibitors (oseltamivir and zanamivir) has been reported so far this season.

This is the second consecutive week with a decrease in the proportion of positive sentinel samples. This fact and the reported national trends indicate that the peaks of the epidemics have passed in many, but by no means all EU/EEA countries. The epidemics remain dominated by A(H3) viruses, but B viruses seem to have been increasing late in the season.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Medium or higher intensity was reported by 20 countries and increasing trends were reported by three countries. For more information, **click here**.

Virological surveillance Of the 2 962 influenza viruses detected from sentinel and non-sentinel sources during week 10/2012, 2 778 (93.8%) were type A and 184 (6.2%) were type B. For more information, **click here**.

Hospital surveillance of severe acute respiratory infection (SARI): Since week 40/2011, seven countries have reported 1 238 SARI cases, 873 (70.5%) of which were related to influenza virus infection. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

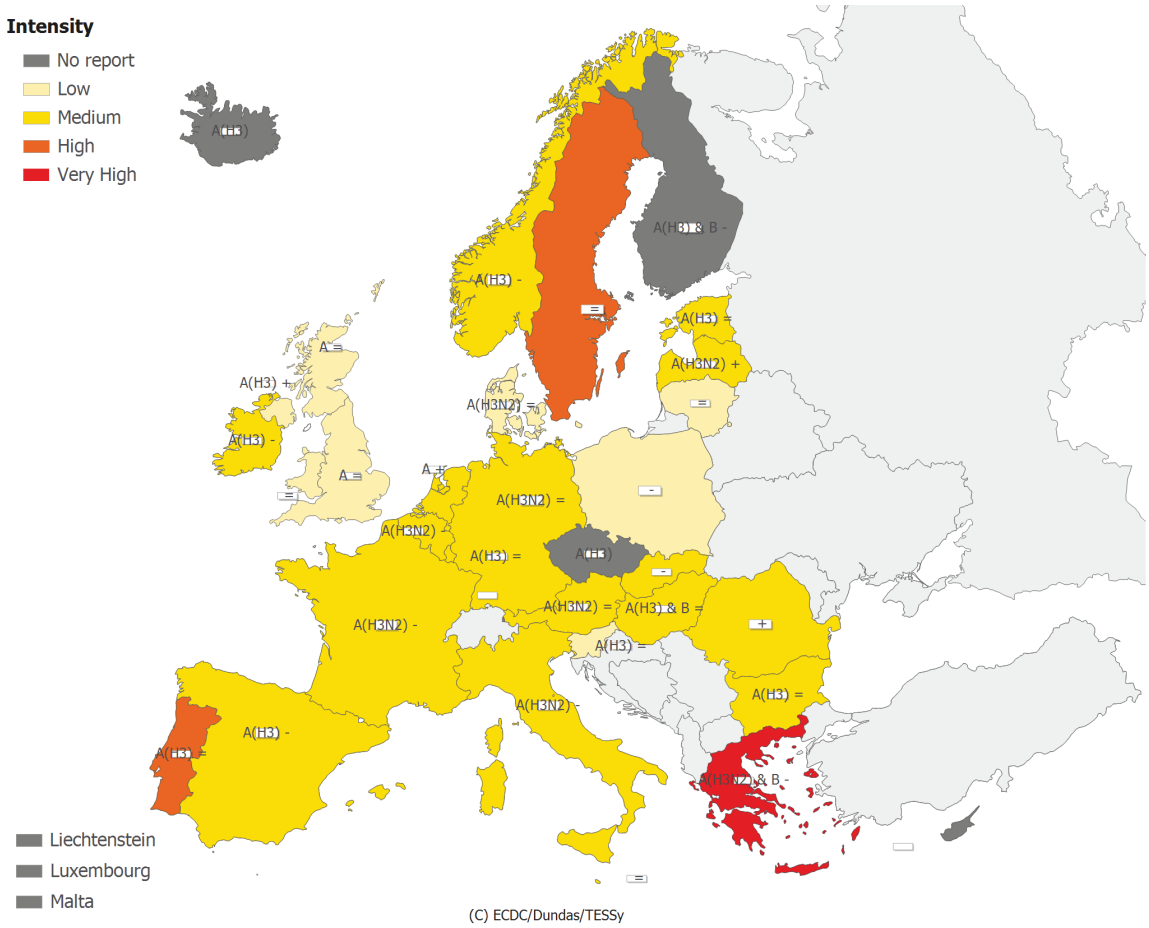
Weekly analysis – epidemiology

During week 10/2012, 26 countries reported clinical data. Low intensity was reported by five countries, medium intensity was reported by 17 countries, Portugal and Sweden reported high intensity and Greece reported very high intensity (Table 1, Map 1). Italy and Spain have reported medium intensity for nine consecutive weeks and 18 countries have reported medium or higher intensity for at least three consecutive weeks.

Geographic spread was reported as widespread by 13 countries (Austria, Belgium, Estonia, France, Greece, Hungary, Latvia, Luxembourg, the Netherlands, Norway, Portugal, Slovenia, and Sweden), regional by six, local by two, and sporadic by four. Two countries (Cyprus and Poland) reported no activity (Table 1, Map 2).

Increasing trends in clinical activity were reported by Latvia, the Netherlands and Romania, which is an important reduction from the 11 countries reporting increasing trends for week 9/2012. Stable trends were reported by 13 countries and decreasing trends by ten countries (Table 1, Map 2). Finland, Ireland, Italy and Spain have reported decreasing trends for at least two consecutive weeks, suggesting that their influenza seasons have peaked.

Map 1: Intensity for week 10/2012

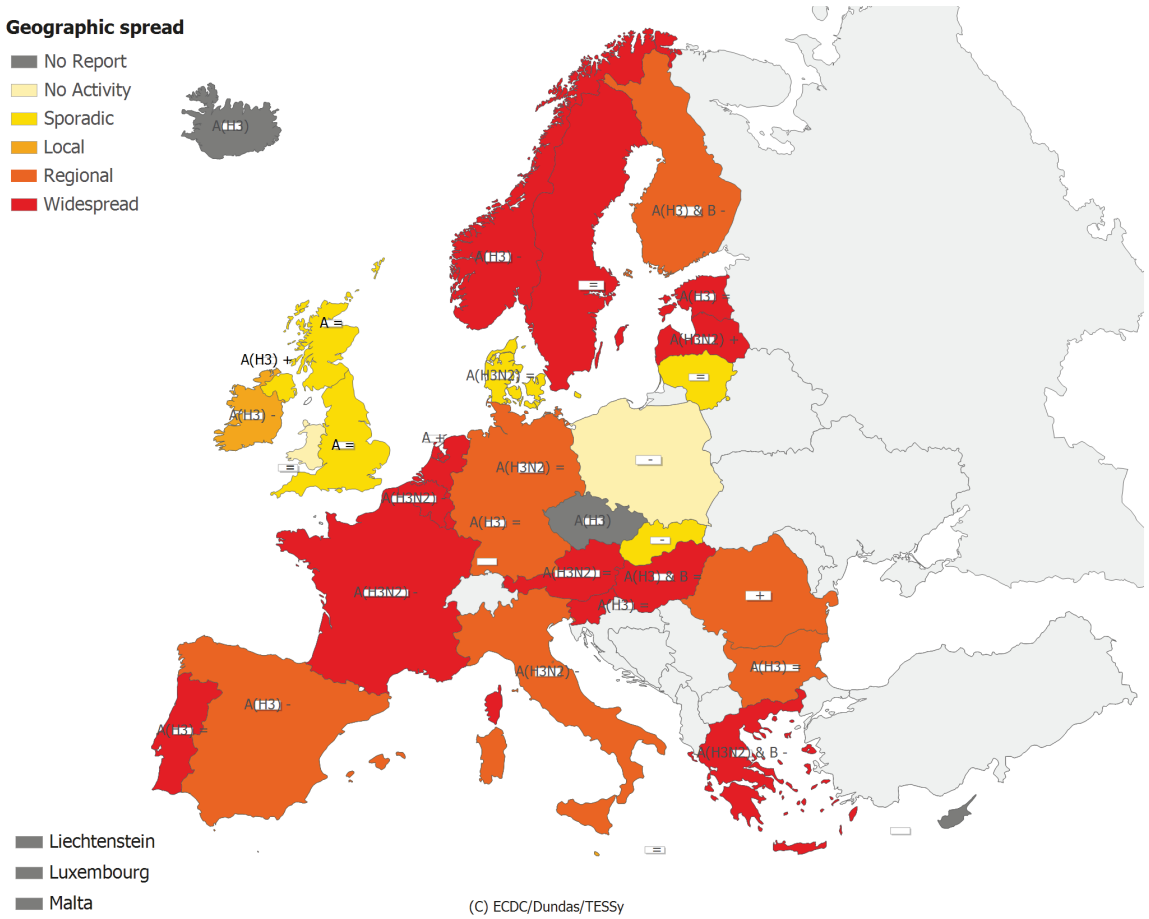


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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 10/2012



* 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 10/2012

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	Medium	Widespread	Stable	68	A(H3N2)	55.9	35.0	-	Graphs	Graphs
Belgium	Medium	Widespread	Decreasing	62	A(H3N2)	48.4	336.5	1922.4	Graphs	Graphs
Bulgaria	Medium	Regional	Stable	6	A(H3)	83.3	-	1011.2	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic				29	A(H3)	48.3	-	-	Graphs	Graphs
Denmark	Low	Sporadic	Stable	3	A(H3N2)	66.7	72.7	-	Graphs	Graphs
Estonia	Medium	Widespread	Stable	31	A(H3)	58.1	15.4	361.7	Graphs	Graphs
Finland	Unknown (no information available)	Regional	Decreasing	63	A(H3) & B	20.6	-	-	Graphs	Graphs
France	Medium	Widespread	Decreasing	197	A(H3N2)	45.2	-	1890.3	Graphs	Graphs
Germany	Medium	Regional	Stable	132	A(H3N2)	39.4	-	1333.6	Graphs	Graphs
Greece	Very High	Widespread	Decreasing	46	A(H3N2) & B	71.7	456.9	-	Graphs	Graphs
Hungary	Medium	Widespread	Stable	102	A(H3) & B	51.0	392.0	-	Graphs	Graphs
Iceland				0	A(H3)	0.0	-	-	Graphs	Graphs
Ireland	Medium	Local	Decreasing	30	A(H3)	46.7	22.9	-	Graphs	Graphs
Italy	Medium	Regional	Decreasing	40	A(H3N2)	37.5	297.7	-	Graphs	Graphs
Latvia	Medium	Widespread	Increasing	6	A(H3N2)	33.3	167.0	1408.2	Graphs	Graphs
Lithuania	Low	Sporadic	Stable	25	None	44.0	3.9	473.3	Graphs	Graphs
Luxembourg	Medium	Widespread	Stable	36	A(H3)	52.8	-*	-*	Graphs	Graphs
Malta	Medium	Local	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Netherlands	Medium	Widespread	Increasing	20	A	35.0	78.0	-	Graphs	Graphs
Norway	Medium	Widespread	Decreasing	14	A(H3)	71.4	145.8	-	Graphs	Graphs
Poland	Low	No activity	Decreasing	8	None	25.0	105.1	-	Graphs	Graphs
Portugal	High	Widespread	Stable	6	A(H3)	50.0	120.7	-	Graphs	Graphs
Romania	Medium	Regional	Increasing	25	None	64.0	5.1	861.1	Graphs	Graphs
Slovakia	Medium	Sporadic	Decreasing	9	None	0.0	203.4	1603.0	Graphs	Graphs
Slovenia	Low	Widespread	Stable	49	A(H3)	61.2	53.6	1398.6	Graphs	Graphs
Spain	Medium	Regional	Decreasing	200	A(H3)	44.5	83.9	-	Graphs	Graphs
Sweden	High	Widespread	Stable	99	-	20.2	30.3	-	Graphs	Graphs
UK - England	Low	Sporadic	Stable	83	A	34.9	13.0	404.7	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Increasing	4	A(H3)	25.0	32.7	475.4	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	38	A	13.2	15.0	511.6	Graphs	Graphs
UK - Wales	Low	No activity	Stable	2	-	0.0	5.6	-	Graphs	Graphs
Europe				1433		43.2				**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 10/2012, 27 countries reported virological data. Of 1 433 sentinel specimens tested, 619 (43.2%) were positive for influenza virus (Table 1, Figure 1), of which 85.1% were type A and 14.9% type B (Table 2). In nine countries, the proportions of positive specimens equalled or exceeded 50%. This represents two consecutive weeks with an important decrease in both number of detections and proportion of positive sentinel samples, suggesting the peak of the epidemic at European level has passed (Figure 1).

Of the 2 962 influenza viruses detected from sentinel and non-sentinel sources during week 10/2012, 2 778 (93.8%) were type A and 184 (6.2%) were type B. Of the 995 influenza A viruses subtyped, 961 (96.6%) were A(H3) and 34 (3.4%) were A(H1)pdm09 (Table2).

Of the 22 568 influenza virus detections in sentinel and non-sentinel specimens since week 40/2011, 21 552 (95.5%) were type A and 1 016 (4.5%) were type B viruses. Of 10 730 influenza A viruses subtyped, 10 460 (97.5%) were A(H3) viruses and 270 (2.5%) were A(H1)pdm09 (Table 2, Figures 2 and 3). The lineage of 134 influenza B viruses has been determined: 73 (54.5%) were B-Victoria and 61 (45.5%) were B-Yamagata lineage (Table 2).

Since week 40/2011, 522 antigenic characterisations of viruses have been reported, of which 452 (86.6%) were A/Perth/16/2009 (H3N2)-like (Figure 4).

Since week 40/2011, 661 genetic characterisations of viruses have been reported, 575 (86.9%) of which have been A(H3) viruses; 364 (55.0%) 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 and therefore, there is an imperfect match with 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 10/2012, 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. Such reporting is recommended by WHO.

In week 10/2012, 19 countries reported 627 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, sub-type and surveillance system, weeks 40/2011–10/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	527	2251	6770	14782
A(H1)pdm09	6	28	71	199
A(H3)	423	538	6013	4447
A(sub-typing not performed)	98	1685	686	10136
Influenza B	92	92	501	515
B(Vic) lineage	6	2	38	35
B(Yam) lineage	3	3	27	34
Unknown lineage	83	87	436	446
Total influenza	**619**	**2343**	**7271**	**15297**

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 40/2011–10/2012

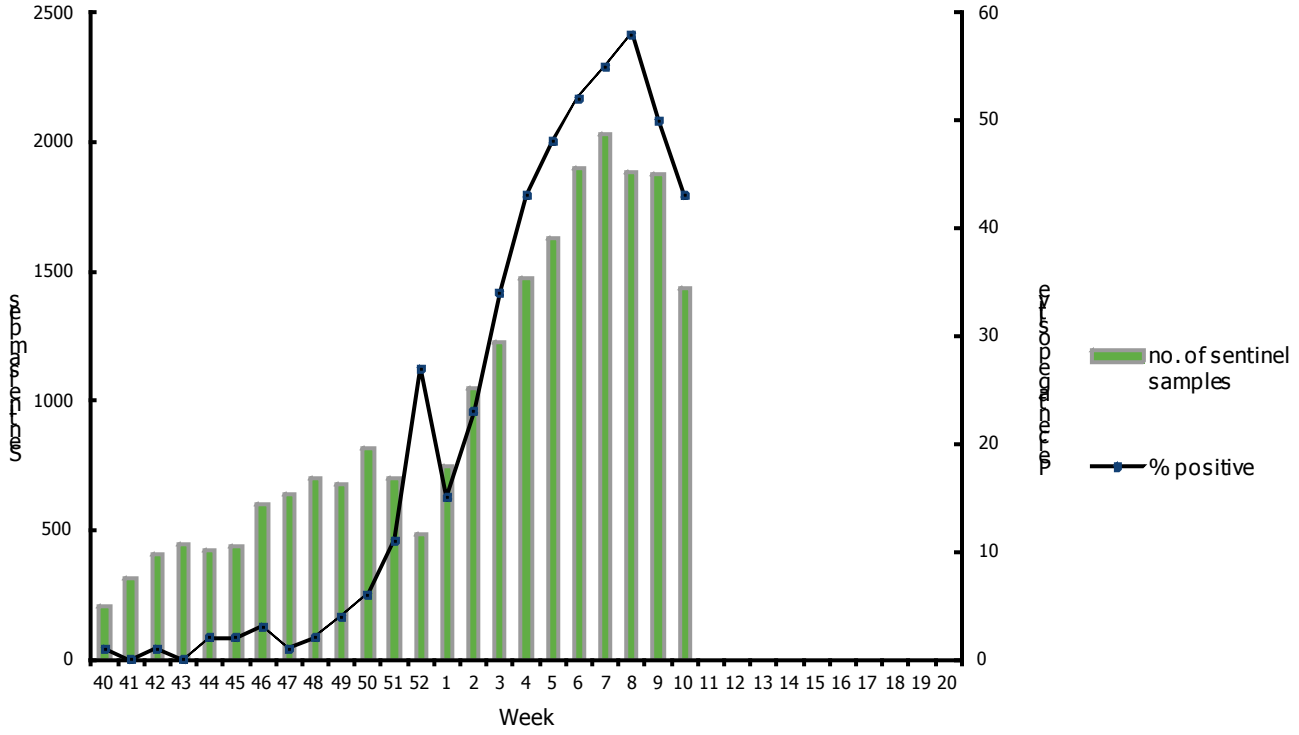


Figure 2: Number of sentinel specimens positive for influenza virus, by type, subtype and week of report, weeks 40/2011–10/2012

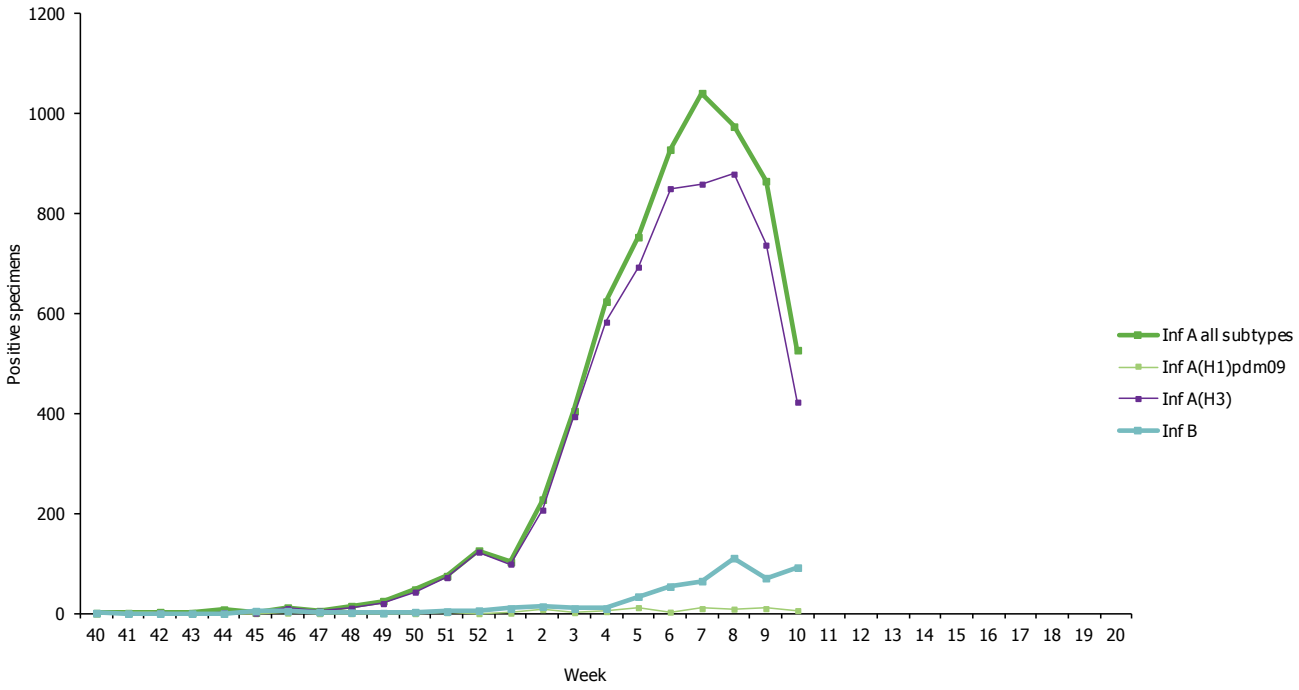


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2011–10/2012

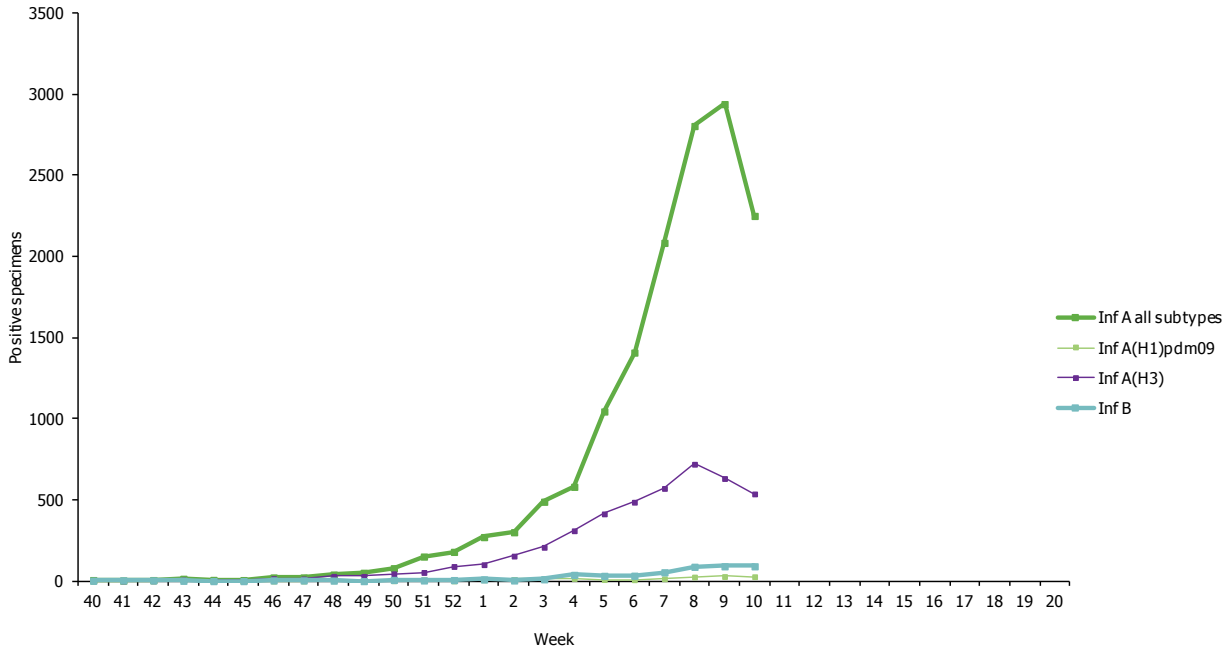


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–10/2012

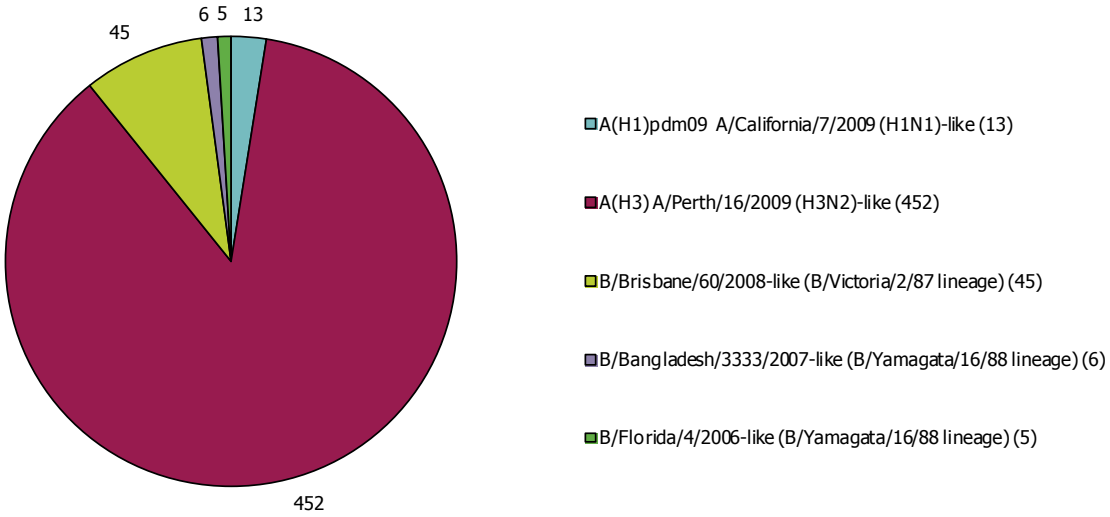


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–10/2012

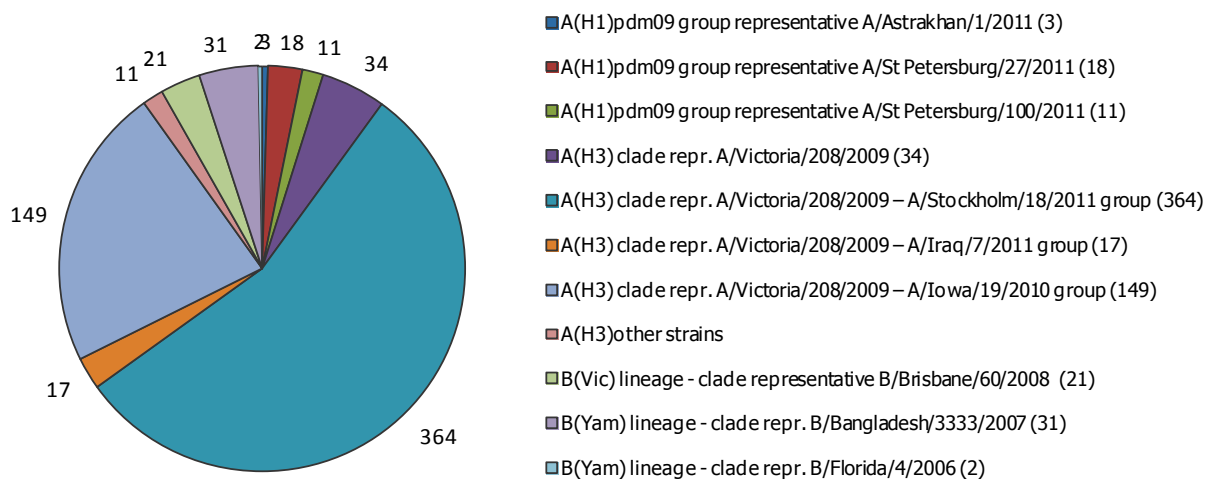
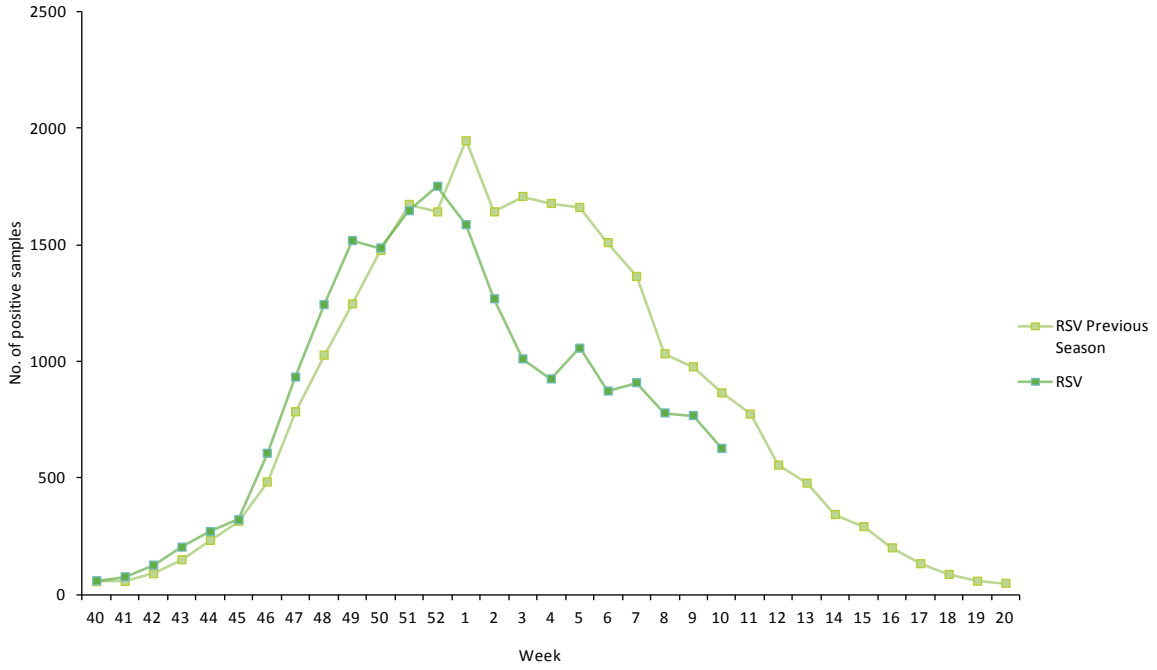


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2011–10/2012

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)	252	0	244	0	98	98 (100)
A(H1N1)pdm 09	30	0	30	0	7	7 (100)
B	15	0	14	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 40/2011–10/2012



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 1 238 SARI cases, including 51 fatalities, have been reported by seven countries (Table 4 and Figure 7). Of 1 104 patients for whom information was available, 599 (54.3%) were male (Table 5).

Of 46 SARI cases reported in week 10/2012, 15 were related to influenza virus infection, of which 11 were of the A(H3) subtype (Table 6).

Of the 1 238 cumulative cases since week 40/2011, 873 (70.5%) were influenza-related. Of these, 552 were type A viruses that have been subtyped, revealing that 518 (93.8%) were associated with A(H3) infection and 34 (6.2%) with A(H1)pdm09 (Table 6).

Since week 40/2011, at least 170 (32.8%) of 518 SARI cases admitted to ICU required ventilation (Table 7).

Of 520 SARI cases for which vaccination status was available, 349 (67.1%) were not vaccinated against influenza (Table 8).

Table 4: Cumulative number of SARI cases, weeks 40/2011–10/2012

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		
Spain	478		24		
Belgium	153		2		
Slovakia	18	0.33			5440078
France	182		17		
United Kingdom	129	0.22			59255492
Romania	271	4.66	5	0.09	5813728
Total	**1238**		**51**		

Figure 7: Number of SARI cases by week of onset, weeks 40/2011–10/2012

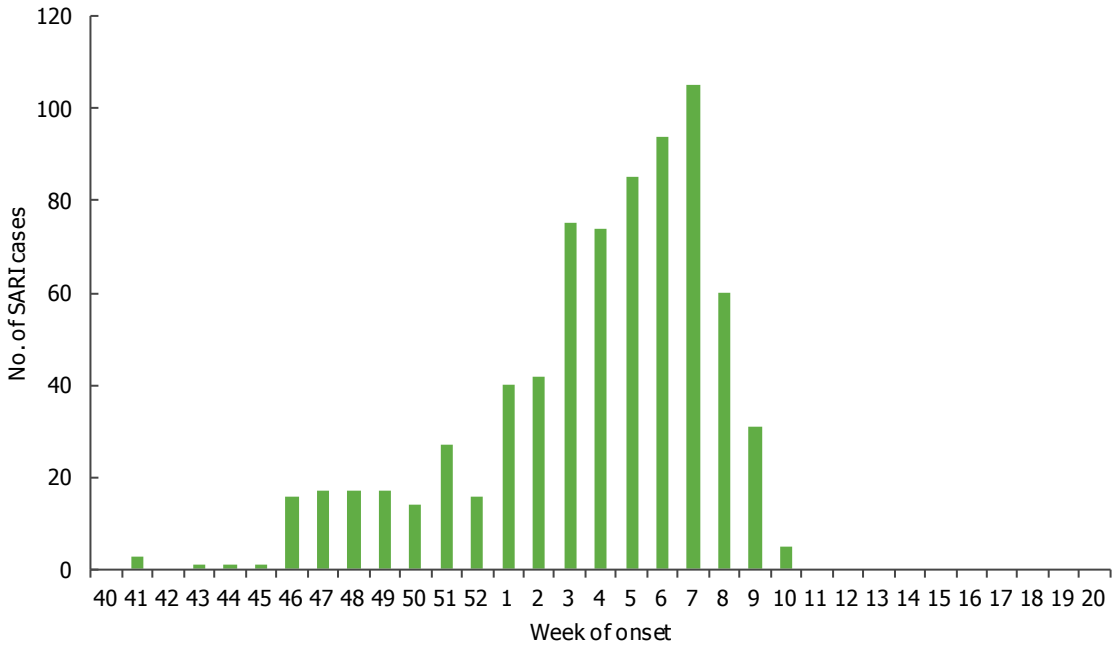


Table 5: Number of SARI cases by age and gender, weeks 40/2011–10/2012

Age groups	Male	Female	Unknown
Under 2	127	93	1
2-17	124	92	
18-44	54	61	1
45-59	74	63	1
>=60	215	195	2
Unknown	5	1	129
Total	**599**	**505**	134

Table 6: Number of SARI cases by influenza type and subtype and other pathogens, week 10/2012 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	15	850
A(H1)pdm09		34
A(H3)	11	518
A(subtyping not performed)	4	298
Influenza B		23
Other pathogen		4
Unknown	31	361
Total	46	1238

Table 7: Number of SARI cases by level of care and respiratory support, weeks 40/2011–10/2012

Respiratory support	ICU	In-patient ward	Other	Unknown
No respiratory support necessary	40	124		128
Oxygen therapy	20	74		16
Respiratory support given unknown	288	9	269	58
Ventilator	170			9

Table 8: Number of SARI cases by influenza vaccination status, weeks 40/2011–10/2012

Vaccination status	No. of influenza cases	Percentage of cases
Seasonal vaccination	114	13.1
Vaccinated for A(H1N1) 2009	8	0.9
Fully vaccinated for seasonal and A(H1N1)2009	49	5.6
Not vaccinated	349	40.0
Unknown	353	40.4
TOTAL	**873**	

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.