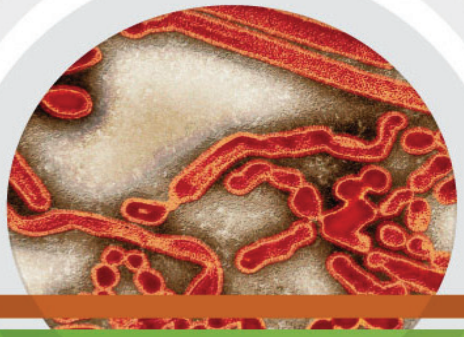


SURVEILLANCE REPORT

Weekly influenza surveillance overview

9 March 2012

Main surveillance developments in week 9/2012 (27 February – 4 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 later than recent seasons and has been without any clear geographic progression. The following points are noteworthy this week:

- Medium or higher intensity has been reported by 18 countries and increasing trends by 11 countries. Bulgaria, Italy and Spain have reported decreasing trends for at least two weeks in a row and are therefore the first three European countries past their epidemic peak this season.
- Of 1 606 sentinel specimens tested, 48.0% were positive for influenza virus, the first proper decline this year. Of these sentinel viruses, 91.4% were type A and 8.6% were type B. Only six were A(H1)pdm09 (<1%).
- Since week 40/2011, 1 024 SARI cases , including 40 fatalities, have been reported by seven countries. Of these cases, 690 were related to influenza infection – 90% with A(H3), 5% with A(H1)pdm09 and 5% with B viruses.
- No resistance to neuraminidase inhibitors (oseltamivir and zanamivir) has been reported so far this season.

Three European countries have now seen a peak in their national influenza season epidemics but the trend is still upward in a number of others. The epidemics remain dominated by A(H3) viruses, but B viruses seem to be on the increase recently.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Medium or higher intensity was reported by 18 countries and increasing trends were reported by 11 countries. For more information, **click here**.

Virological surveillance Of the 2 733 influenza viruses detected from sentinel and non-sentinel sources during week 9/2012, 2590 (94.8%) were type A and 143 (5.2%) were type B. For more information, **click here**.

Hospital surveillance of severe acute respiratory infection (SARI): Since week 40/2011, seven countries have reported 1 024 SARI cases, 690 (67.4%) of which were related to influenza virus infection. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

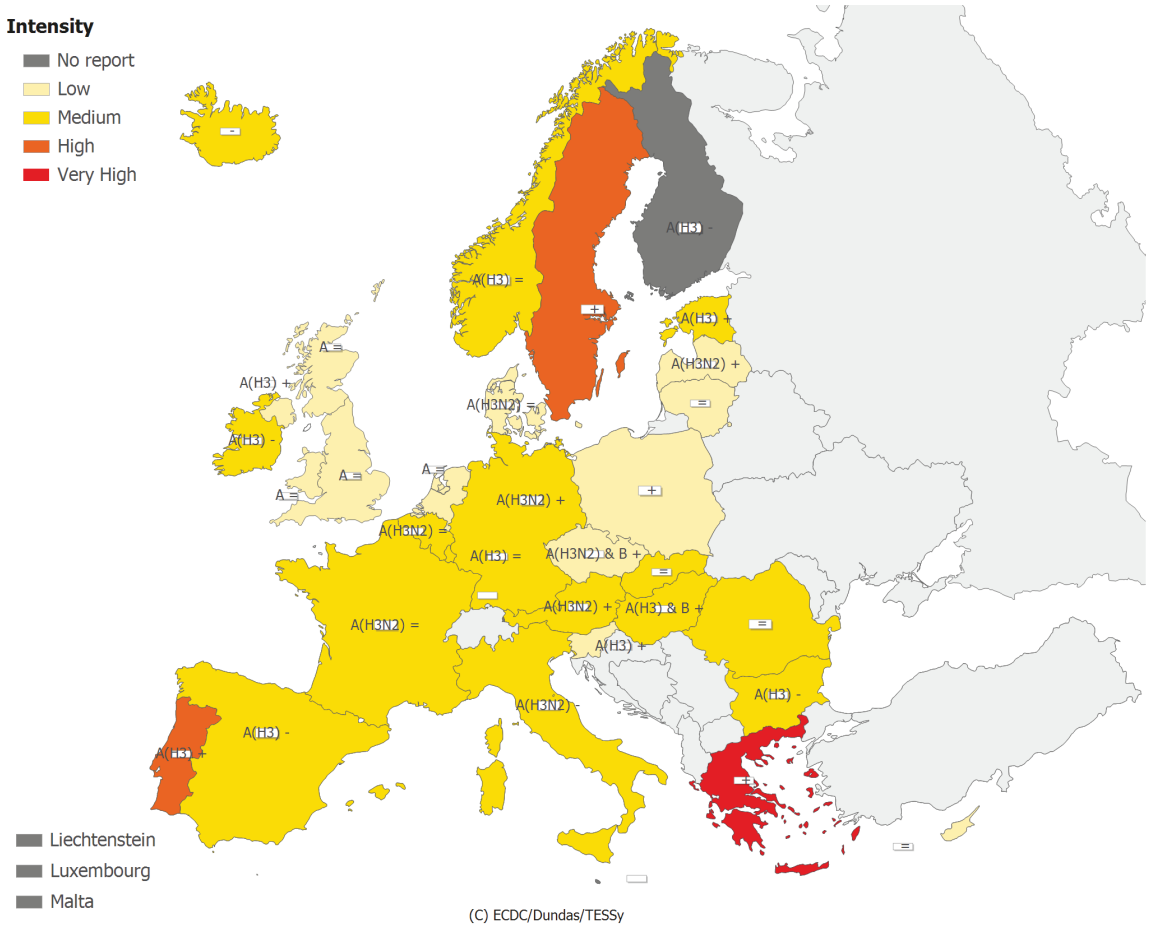
Weekly analysis – epidemiology

During week 9/2012, 27 countries reported clinical data. Low intensity was reported by nine countries; medium intensity by 15 countries (Table 1, Map 1); Portugal and Sweden reported high intensity and Greece reported very high intensity. Italy and Spain have reported medium intensity for eight consecutive weeks and 12 countries have reported medium intensity for at least three consecutive weeks.

Geographic spread was reported as widespread by 14 countries (Austria, Belgium, Estonia, Finland, France, Greece, Hungary, Luxembourg, the Netherlands, Norway, Portugal, Slovenia, Spain and Sweden), regional by seven, local by one, and sporadic by four. Two countries (Cyprus and Poland) reported no activity (Table 1, Map 2).

Increasing trends in clinical activity were reported by 11 countries, with eight countries reporting increasing trends for at least two consecutive weeks. Stable trends were reported by 11 countries and decreasing trends by six countries (Table 1, Map 2). Bulgaria, 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 9/2012

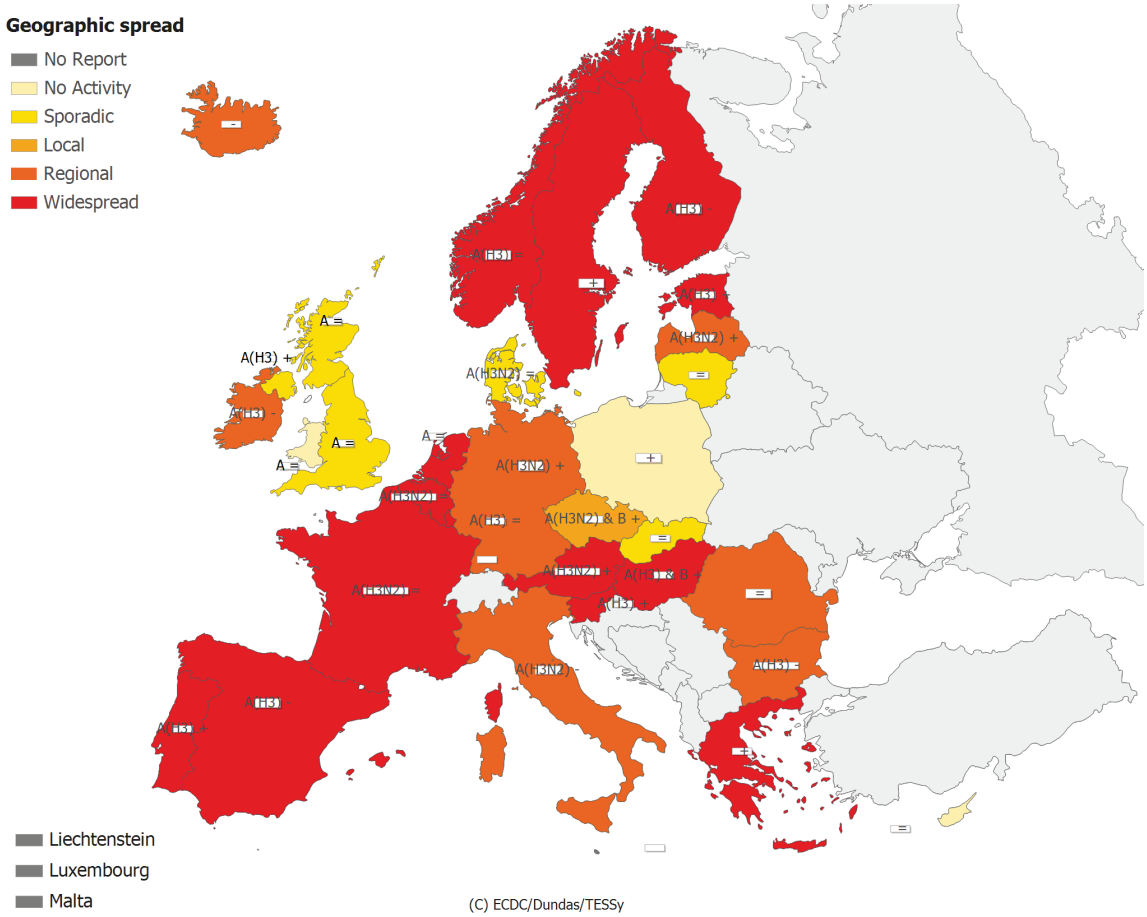


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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 9/2012



* 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 9/2012

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	Increasing	57	A(H3N2)	68.4	39.3	-	Graphs	Graphs
Belgium	Medium	Widespread	Stable	113	A(H3N2)	61.9	469.7	2149.0	Graphs	Graphs
Bulgaria	Medium	Regional	Decreasing	10	A(H3)	70.0	-	1029.1	Graphs	Graphs
Cyprus	Low	No activity	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic	Low	Local	Increasing	28	A(H3N2) & B	35.7	54.6	985.5	Graphs	Graphs
Denmark	Low	Sporadic	Stable	5	A(H3N2)	20.0	54.0	-	Graphs	Graphs
Estonia	Medium	Widespread	Increasing	30	A(H3)	50.0	14.9	425.4	Graphs	Graphs
Finland		Widespread	Decreasing	74	A(H3)	35.1	-	-	Graphs	Graphs
France	Medium	Widespread	Stable	228	A(H3N2)	52.2	-	2167.7	Graphs	Graphs
Germany	Medium	Regional	Increasing	147	A(H3N2)	36.1	-	1542.9	Graphs	Graphs
Greece	Very High	Widespread	Increasing	39	None	69.2	410.1	-	Graphs	Graphs
Hungary	Medium	Widespread	Increasing	125	A(H3) & B	40.0	395.6	-	Graphs	Graphs
Iceland	Medium	Regional	Decreasing	-	-	0.0	95.5	-	Graphs	Graphs
Ireland	Medium	Regional	Decreasing	29	A(H3)	65.5	34.6	-	Graphs	Graphs
Italy	Medium	Regional	Decreasing	80	A(H3N2)	43.8	418.7	-	Graphs	Graphs
Latvia	Low	Regional	Increasing	3	A(H3N2)	33.3	38.0	1243.1	Graphs	Graphs
Lithuania	Low	Sporadic	Stable	6	None	50.0	2.4	440.2	Graphs	Graphs
Luxembourg	Medium	Widespread	Stable	24	A(H3)	91.7	-*	-*	Graphs	Graphs
Malta				-	-	0.0	-	-		
Netherlands	Low	Widespread	Stable	24	A	37.5	49.5	-	Graphs	Graphs
Norway	Medium	Widespread	Stable	8	A(H3)	75.0	157.2	-	Graphs	Graphs
Poland	Low	No activity	Increasing	31	None	6.5	256.2	-	Graphs	Graphs
Portugal	High	Widespread	Increasing	17	A(H3)	52.9	141.3	-	Graphs	Graphs
Romania	Medium	Regional	Stable	21	None	52.4	4.5	843.4	Graphs	Graphs
Slovakia	Medium	Sporadic	Stable	11	None	36.4	220.8	1786.1	Graphs	Graphs
Slovenia	Low	Widespread	Increasing	43	A(H3)	62.8	63.2	1305.9	Graphs	Graphs
Spain	Medium	Widespread	Decreasing	309	A(H3)	51.8	140.0	-	Graphs	Graphs
Sweden	High	Widespread	Increasing	-	-	0.0	30.3	-	Graphs	Graphs
UK - England	Low	Sporadic	Stable	106	A	34.9	15.1	435.3	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Increasing	2	A(H3)	0.0	31.2	422.5	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	36	A	25.0	11.4	533.5	Graphs	Graphs
UK - Wales	Low	No activity	Stable	0	A	0.0	4.4	-	Graphs	Graphs
Europe				1606		48.0				**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 9/2012, 23 countries reported virological data. Of 1 606 sentinel specimens tested, 771 (48.0%) were positive for influenza virus, the first proper decline this year (Table 1, Figure 1), of which 91.4% were type A and 8.6% type B (Table 2). In 14 countries, the proportions of positive specimens equalled or exceeded 50%. During the high season there is an inherent delay in reporting sentinel detections and the detections for previous weeks are updated retrospectively, so the difference between the proportions of positive sentinel samples for weeks 8 and 9/2012 might be smaller than currently reported (Figure 1).

Of the 2 733 influenza viruses detected from sentinel and non-sentinel sources during week 9/2012, 2 590 (94.8%) were type A and 143 (5.2%) were type B. Of the 1 029 influenza A viruses subtyped, 1 010 (98.2%) were A(H3) and 19 (1.8%) were A(H1)pdm09 (Table2).

Of the 18 248 influenza virus detections in sentinel and non-sentinel specimens since week 40/2011, 17 445 (95.6%) were type A and 803 (4.4%) were type B viruses. Of 9 229 influenza A viruses subtyped, 9 013 (97.7%) were A(H3) viruses and 216 (2.3%) were A(H1)pdm09 (Table 2, Figures 2 and 3). The lineage of 109 influenza B viruses has been determined: 60 (55.0%) were B-Victoria and 49 (45.0%) were B-Yamagata lineage (Table 2).

Since week 40/2011, 349 antigenic characterisations of viruses have been reported, of which 308 (88.3%) were A/Perth/16/2009 (H3N2)-like (Figure 4).

Since week 40/2011, 598 genetic characterisations of viruses have been reported, 521 (87.1%) of which have been A(H3) viruses; 330 (55.2%) 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 generally 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 February report prepared by the Community Network of Reference Laboratories (CNRL) coordination team.

Between week 40/2011 and week 9/2012, antiviral susceptibility data was reported from England, 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 9/2012, 17 countries reported 585 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 40/2011–9/2012

Virus type/sub-type	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	705	1885	6060	11385
A(H1)pdm09	6	13	61	155
A(H3)	586	424	5348	3665
A(sub-typing not performed)	113	1448	651	7565
Influenza B	66	77	398	405
B(Vic) lineage	3	4	27	33
B(Yam) lineage	2	5	22	27
Unknown lineage	61	68	349	345
Total influenza	**771**	**1962**	**6458**	**11790**

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 40/2011–9/2012

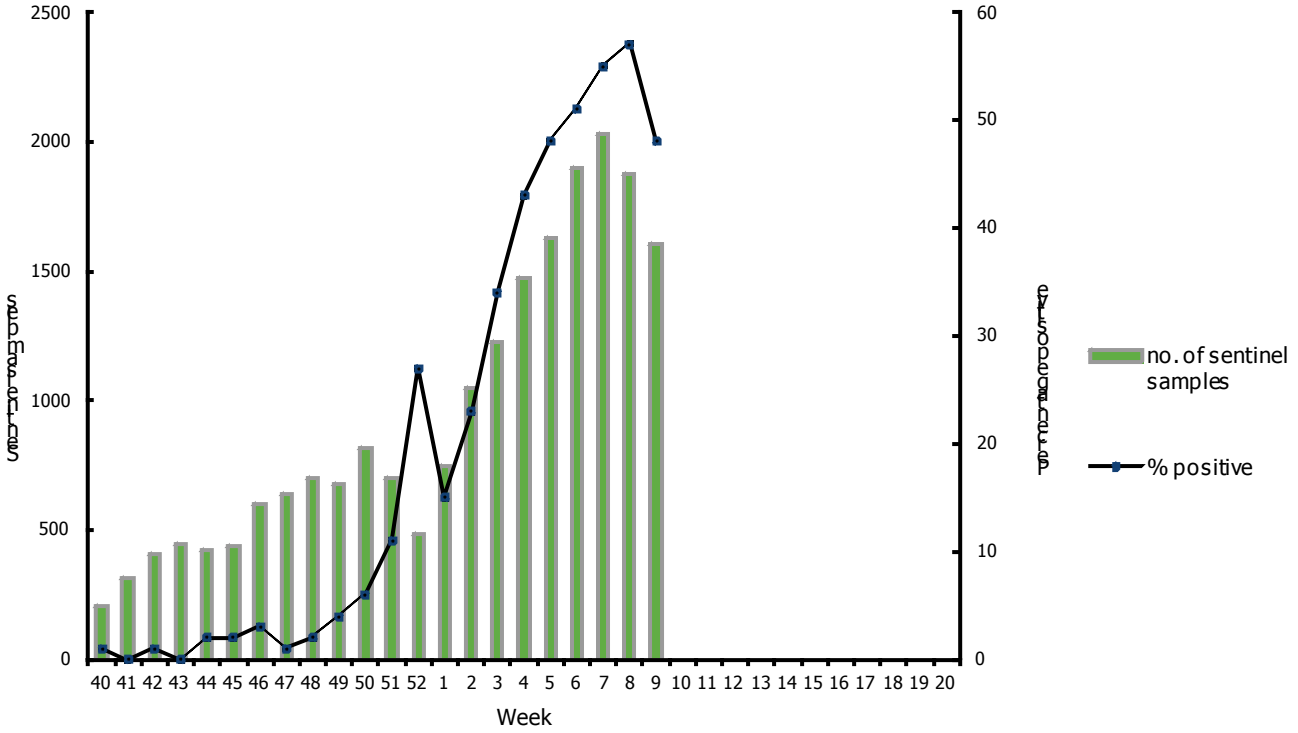


Figure 2: Number of sentinel specimens positive for influenza virus, by type, subtype and week of report, weeks 40/2011–9/2012

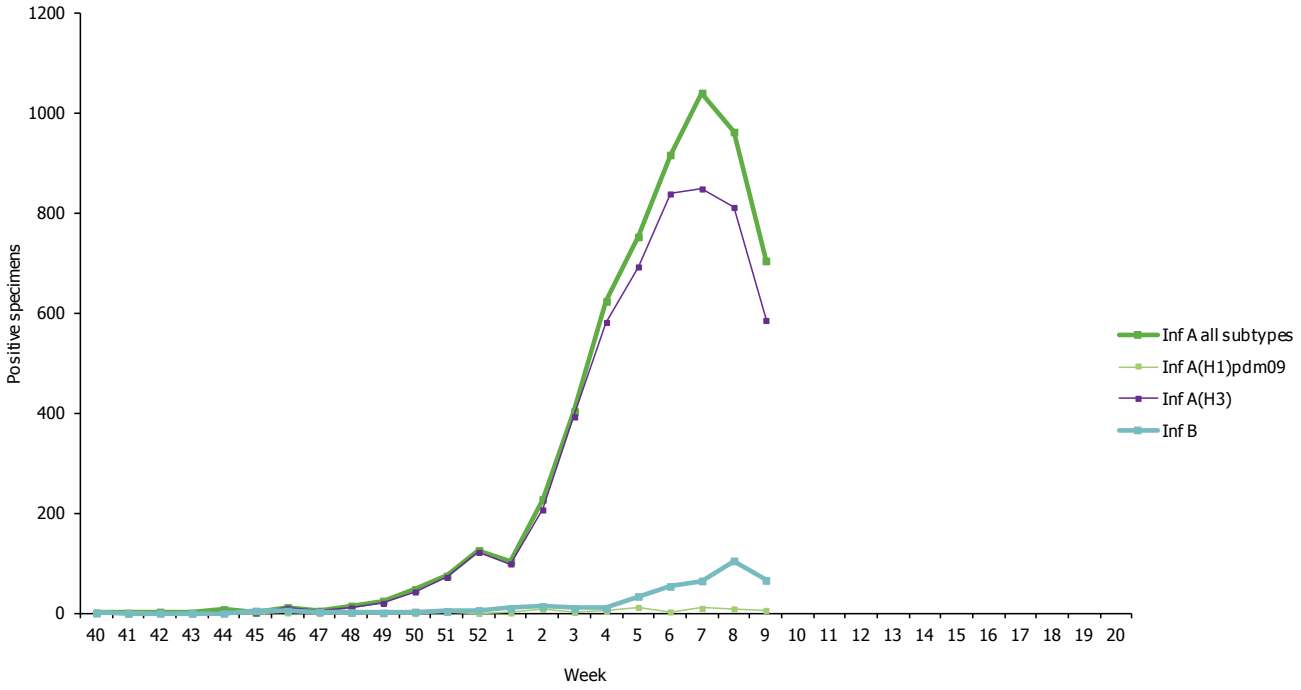


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2011–9/2012

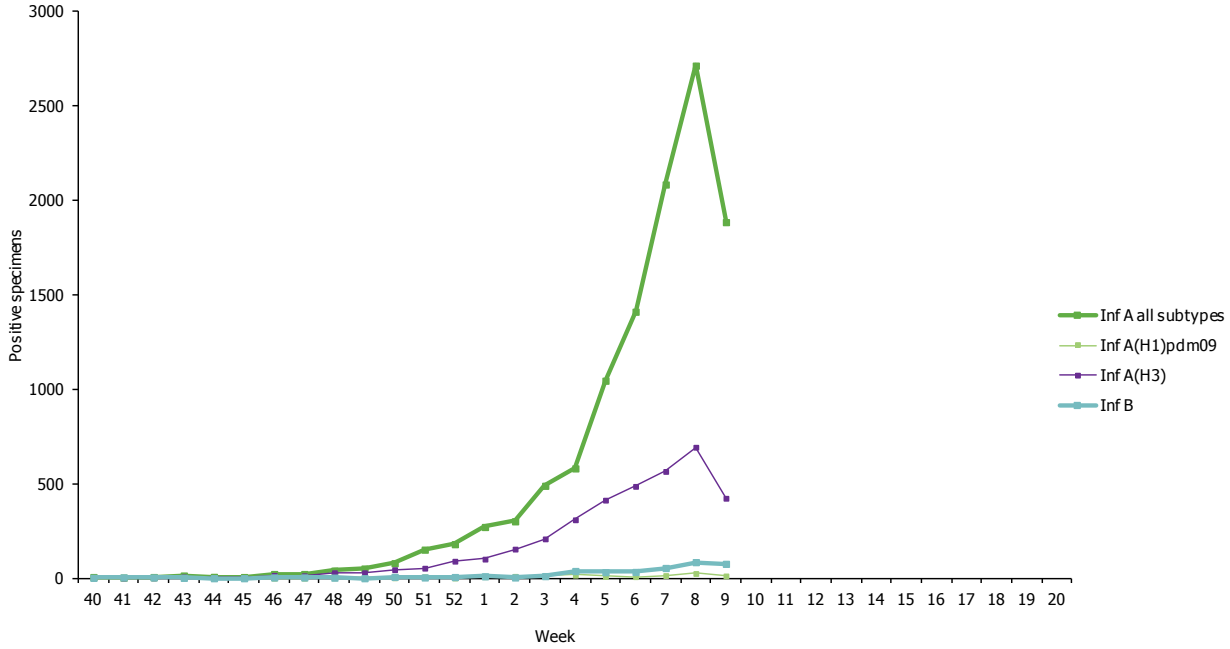


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–9/2012

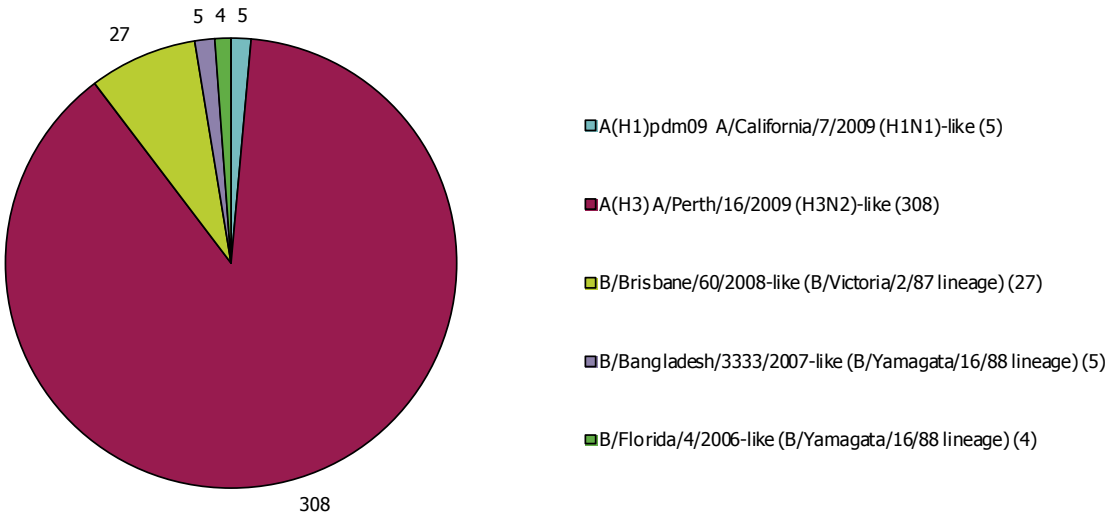


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–9/2012

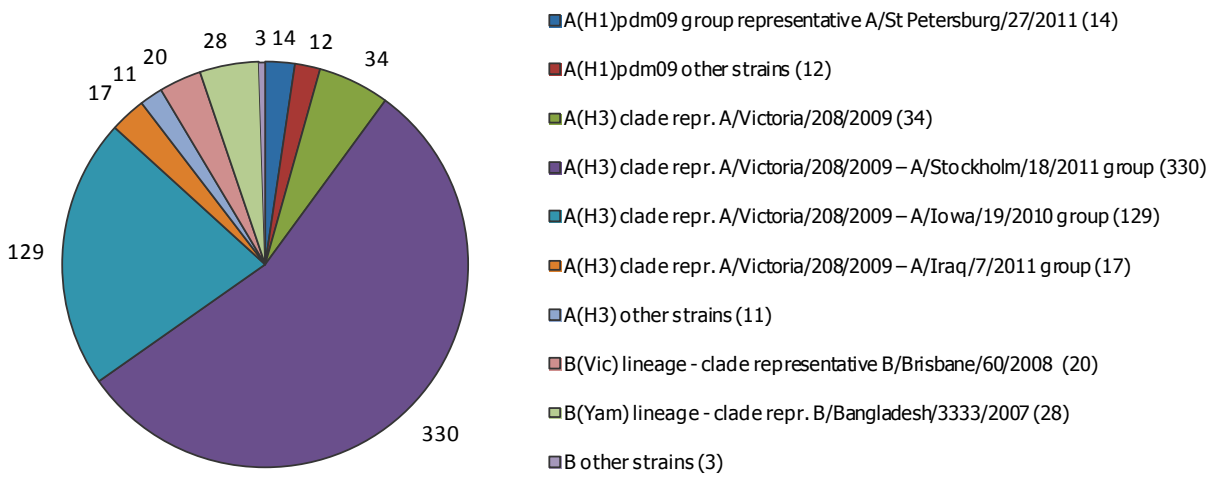
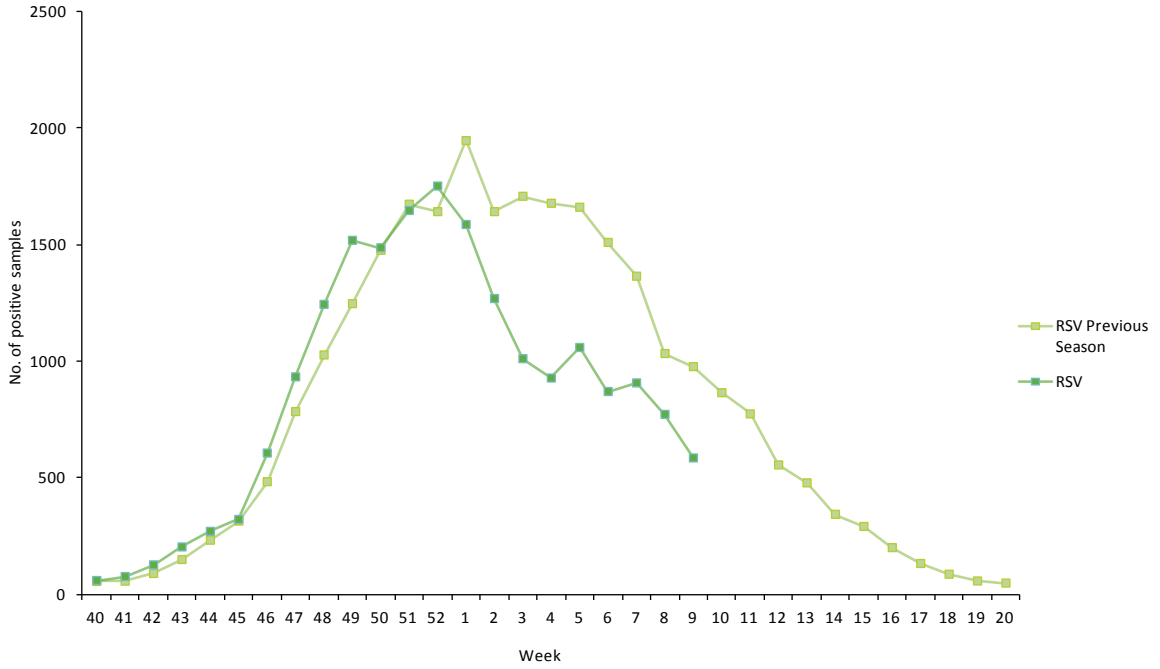


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2011–9/2012

Virus type and sub-type	Resistance to neuraminidase inhibitors				Resistance to M2 inhibitors	
	Oseltamivir		Zanamivir		Isolates tested	Resistant n (%)
	Isolates tested	Resistant n (%)	Isolates tested	Resistant n (%)		
A(H3N2)	200	0	192	0	91	91 (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 40/2011–9/2012



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 1 024 SARI cases, including 40 fatalities, have been reported by seven countries (Table 4 and Figure 7). Of 957 patients for whom information was available, 525 (54.9%) were male (Table 5).

Of 64 SARI cases reported in week 9/2012, 35 were related to influenza virus infection, of which 16 were of the A(H3) subtype (Table 6).

Of the 1 024 cumulative cases since week 40/2011, 690 (67.4%) were influenza-related. Of these, 469 viruses have undergone typing and subtyping, revealing that 423 (90.2%) were associated with A(H3) infection, 24 (5.1%) with A(H1)pdm09 and 22 (4.7%) with type B (Table 6).

Since week 40/2011, at least 123 (33.4%) of 368 SARI cases admitted to ICU required ventilation (Table 7).

Of 432 SARI cases for which vaccination status was available, 280 (64.8%) were not vaccinated against influenza (Table 8).

Table 4: Cumulative number of SARI cases, weeks 40/2011–9/2012

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	18	0.33			5440078
Romania	257	4.42	5	0.09	5813728
Ireland	7		3		
France	128		11		
United Kingdom	62	0.1			59255492
Spain	421		20		
Belgium	131		1		
Total	**1024**		**40**		

Figure 7: Number of SARI cases by week of onset, weeks 40/2011–9/2012

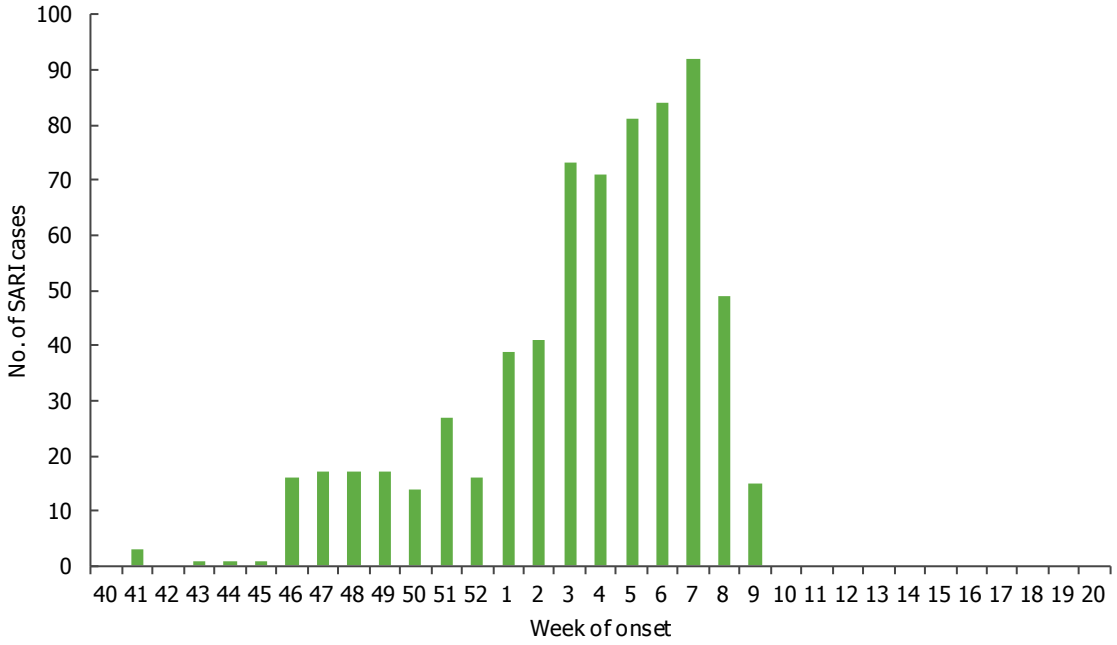


Table 5: Number of SARI cases by age and gender, weeks 40/2011–9/2012

Age groups	Male	Female	Unknown
Under 2	114	88	
2-17	114	83	
18-44	45	50	1
45-59	63	50	2
>=60	187	159	2
Unknown	2	2	62
Total	**525**	**432**	**67**

Table 6: Number of SARI cases by influenza type and subtype and other pathogens, week 9/2012 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	33	668
A(H1)pdm09		24
A(H3)	16	423
A(subtyping not performed)	17	221
Influenza B	2	22
Other pathogen		4
Unknown	29	330
Total	64	1024

Table 7: Number of SARI cases by level of care and respiratory support, weeks 40/2011–9/2012

Respiratory support	ICU	In-patient ward	Other	Unknown
No respiratory support necessary	29	124		109
Oxygen therapy	19	74		14
Respiratory support given unknown	197	9	238	56
Ventilator	123			8

Table 8: Number of SARI cases by influenza vaccination status, weeks 40/2011–9/2012

Vaccination status	No. of influenza cases	Percentage of cases
Seasonal vaccination	96	13.9
Vaccinated for A(H1N1) 2009	7	1.0
Fully vaccinated seasonal and A(H1N1)2009	49	7.1
Not vaccinated	280	40.6
Unknown	258	37.4
TOTAL	**690**	

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.