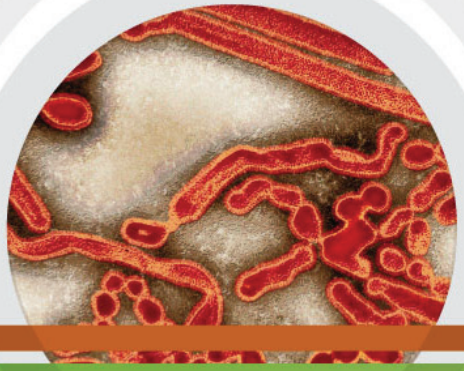


SURVEILLANCE REPORT

Weekly influenza surveillance overview

6 January 2012

Main surveillance developments in week 52/2011 (26 December 2011 – 1 January 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.

- During week 52/2011, low influenza activity was notified by all 24 countries reporting.
- Of 380 sentinel specimens collected and tested during week 52/2011, 89 (23.4%) were positive for influenza viruses, over twice the percentage reported in week 51.
- Of 414 influenza A viruses sub-typed from sentinel and non-sentinel sources since week 40/2011, 391 (94.4%) were of the H3 subtype.
- From the limited number of viruses tested so far this season there is no indication of resistance to oseltamivir or zanamivir but, as usual, all tested viruses were found to be resistant to the M2-inhibitors.
- Since week 40/2011, 117 severe acute respiratory infection (SARI) cases have been reported by five countries. Twenty-six of them were confirmed influenza-positive cases and of those typed or sub-typed nine were A(H1N1)pdm09, seven were A(H3) and two were influenza B viruses.

The epidemics of the influenza season have now begun in Europe and they are currently dominated by A(H3N2) viruses although A(H1N1)pdm09 viruses feature significantly among the severe cases reported.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Influenza activity of low-intensity was notified by all 24 countries reporting, with the majority of them indicating sporadic spread or no activity. For more information **click here**.

Virological surveillance: Twenty-six countries reported virological data. Sentinel physicians collected 380 specimens with 89 (23.4%) testing positive for influenza, representing more than a two-fold rise (9.3% to 23.4%) since the previous week. For more information **click here**.

Hospital surveillance of severe acute respiratory infection (SARI): Since week 40/2011, five countries have reported 117 SARI cases, 26 of which were related to influenza infection. For more information **click here**.

Sentinel surveillance (ILI/ARI)

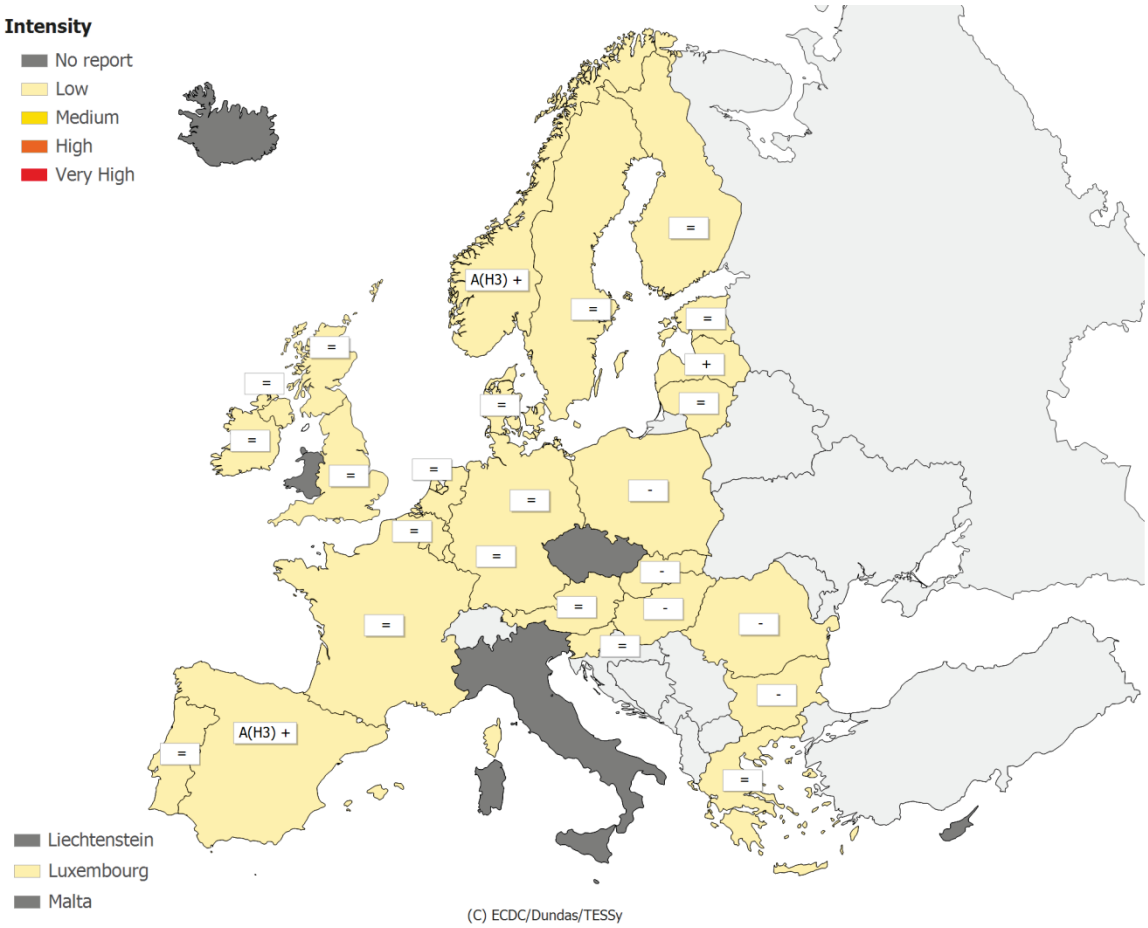
Weekly analysis – epidemiology

During week 52/2011, twenty-three countries and the UK (England, Northern Ireland and Scotland) reported clinical data. All reporting countries experienced low-intensity influenza activity (Table 1, Map 1).

Three countries (the Netherlands, Norway and Spain) reported local spread, while sporadic activity was reported by nine countries (Austria, Belgium, Estonia, France, Germany, Latvia, Romania, Slovenia and Sweden) and the UK (England and Scotland). No geographic spread was reported by eleven countries and the UK (Northern Ireland) (Table 1, Map 2).

Stable trends in clinical activity were reported by 16 countries while increasing trends were reported by Latvia, Norway and Spain. Decreasing trends were reported by Bulgaria, Hungary, Poland, Romania and Slovakia (Table 1, Map 2). Such fluctuations in clinical activity, outside the period when influenza viruses are circulating, are not unusual and reflect other causes of influenza-like illness or acute respiratory infection.

Map 1: Intensity for week 52/2011

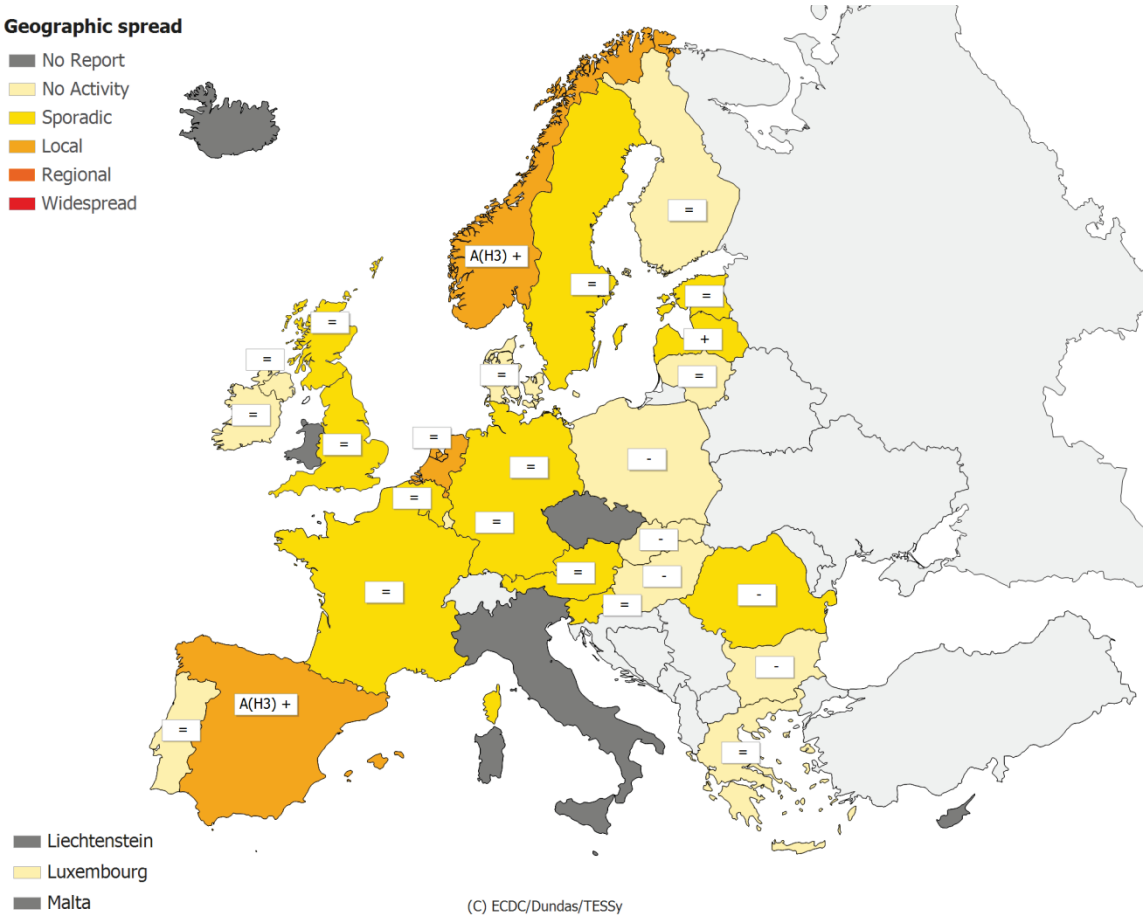


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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(H3)**	Type A, Subtype H3
Very high	Particularly severe levels of influenza activity		

Map 2: Geographic spread for week 52/2011



* 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(H3)	Type A, Subtype H3

Table 1: Epidemiological and virological overview by country, week 52/2011

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	Sporadic	Stable	5	None	20.0	6.7	-	Graphs	Graphs
Belgium	Low	Sporadic	Stable	3	None	33.3	69.0	1403.7	Graphs	Graphs
Bulgaria	Low	No activity	Decreasing	2	None	0.0	-	724.0	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic				6	None	0.0	-	-	Graphs	Graphs
Denmark	Low	No activity	Stable	1	None	0.0	48.7	-	Graphs	Graphs
Estonia	Low	Sporadic	Stable	6	None	0.0	6.0	236.7	Graphs	Graphs
Finland	Low	No activity	Stable	2	None	0.0	-	-	Graphs	Graphs
France	Low	Sporadic	Stable	37	None	8.1	-	1789.1	Graphs	Graphs
Germany	Low	Sporadic	Stable	9	None	11.1	-	844.9	Graphs	Graphs
Greece	Low	No activity	Stable	0	None	0.0	36.8	-	Graphs	Graphs
Hungary	Low	No activity	Decreasing	6	None	0.0	33.4	-	Graphs	Graphs
Iceland				0	A(H3)	0.0	-	-	Graphs	Graphs
Ireland	Low	No activity	Stable	0	None	0.0	8.9	-	Graphs	Graphs
Italy				44	-	43.2	-	-	Graphs	Graphs
Latvia	Low	Sporadic	Increasing	0	A(H3)	0.0	1.9	883.1	Graphs	Graphs
Lithuania	Low	No activity	Stable	0	None	0.0	1.0	333.5	Graphs	Graphs
Luxembourg	Low	No activity	Stable	2	None	0.0	-*	-*	Graphs	Graphs
Malta				-	-	0.0	-	-		
Netherlands	Low	Local	Stable	9	None	0.0	19.6	-	Graphs	Graphs
Norway	Low	Local	Increasing	6	A(H3)	0.0	31.4	-	Graphs	Graphs
Poland	Low	No activity	Decreasing	3	None	0.0	71.8	-	Graphs	Graphs
Portugal	Low	No activity	Stable	2	None	0.0	9.0	-	Graphs	Graphs
Romania	Low	Sporadic	Decreasing	16	None	12.5	2.7	527.4	Graphs	Graphs
Slovakia	Low	No activity	Decreasing	3	None	0.0	94.9	1043.9	Graphs	Graphs
Slovenia	Low	Sporadic	Stable	2	None	0.0	0.0	719.0	Graphs	Graphs
Spain	Low	Local	Increasing	139	A(H3)	40.3	62.3	-	Graphs	Graphs
Sweden	Low	Sporadic	Stable	-	-	0.0	5.4	-	Graphs	Graphs
UK - England	Low	Sporadic	Stable	48	None	8.3	6.9	319.7	Graphs	Graphs
UK - Northern Ireland	Low	No activity	Stable	3	-	0.0	20.8	339.2	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	26	None	7.7	8.8	691.4	Graphs	Graphs
UK - Wales				-	-	0.0	-	-		
Europe				**380**		**23.4**				**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.

Country comments

Spain: In week 52/2011, the ILI incidence rate in Spain exceeded the baseline level for first time in the 2011–12 season. Since week 48/2011, there has been an increase in influenza detections and the percentage of positive samples (from 4% to 40%). In week 52/2011, 60 influenza A viruses and two B viruses were detected and of 53 A viruses sub-typed 100% were A(H3), indicating their predominance in Spain.

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 52/2011, 26 countries reported virological data. Of 380 sentinel specimens tested, 89 (23.4%) were positive for influenza virus (Table 1, Figure 1). In addition, 132 non-sentinel source specimens, e.g. specimens collected for diagnostic purposes in hospitals, were found to be positive for influenza virus.

Of the 221 influenza viruses detected from sentinel and non-sentinel sources during week 52/2011, 215 (97.3%) were type A, and six (2.7%) were type B. Of 102 influenza A viruses sub-typed, one (1.0%) was A(H1)pdm09 and 101 (99.0%) were of the A(H3) subtype (Table 2).

Of the 807 influenza virus detections in sentinel and non-sentinel specimens since week 40/2011, 736 (91.2%) were type A, and 71 (8.8%) were type B viruses. Of 414 influenza A viruses sub-typed, 23 (5.6%) were A(H1)pdm09, and 391 (94.4%) were A(H3) viruses (Table 2, Figures 2 and 3). The lineage of 14 influenza B viruses has been determined: eight (57.1%) were B-Yamagata and six (42.9%) were B-Victoria lineage (Table 2). The proportion of sentinel specimens positive for influenza virus has more than doubled compared to the previous week; from 9.3% to 23.4% (Figure 3).

Since week 40/2011, 23 antigenic characterisations of viruses have been reported: 16 as A/Perth/16/2009 (H3N2)-like; two as A/California/7/2009 (H1N1)-like; two as B/Brisbane/60/2008-like (Victoria lineage); two as B/Florida/4/2006-like (Yamagata lineage); and one as B/Bangladesh/3333/2007-like (Yamagata lineage) (Figure 4).

Since week 40/2011, 32 genetic characterisations of viruses have been reported, including 21 A(H3) clade representative A/Victoria/208/2009 – A/Stockholm/18/2011 group (Figure 5).

Since week 40/2011, Germany, Norway, Sweden and the Netherlands have reported antiviral resistance data to TESSy concerning 35 influenza viruses. All 18 viruses tested for sensitivity to neuraminidase inhibitors were susceptible, while the 25 viruses tested for sensitivity to M2 inhibitors were resistant (Table 3).

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

In week 52/2011, 17 countries reported 1 360 respiratory syncytial virus detections (Figure 5).

No unusual human influenza viruses (i.e. variant and other viruses not usually circulating among humans) have been reported to ECDC from EU/EEA countries this week. Such reporting is recommended by WHO: http://www.who.int/influenza/human_animal_interface/avian_influenza/h5n1-2011_12_19/en/index.html

Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2011–52/2011

	Current Period		Season	
Virus type/subtype	**Sentinel**	**Non-sentinel**	**Sentinel**	**Non-sentinel**
Influenza A	87	128	251	485
A (H1)pdm09	0	1	4	19
A (H3)	81	20	219	172
A (sub-typing not performed)	6	107	28	294
Influenza B	2	4	23	48
B(Vic) lineage	0	1	0	6
B(Yam) lineage	0	0	5	3
Unknown lineage	2	3	18	39
Total influenza	**89**	**132**	**274**	**533**

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 40/2011–52/2011

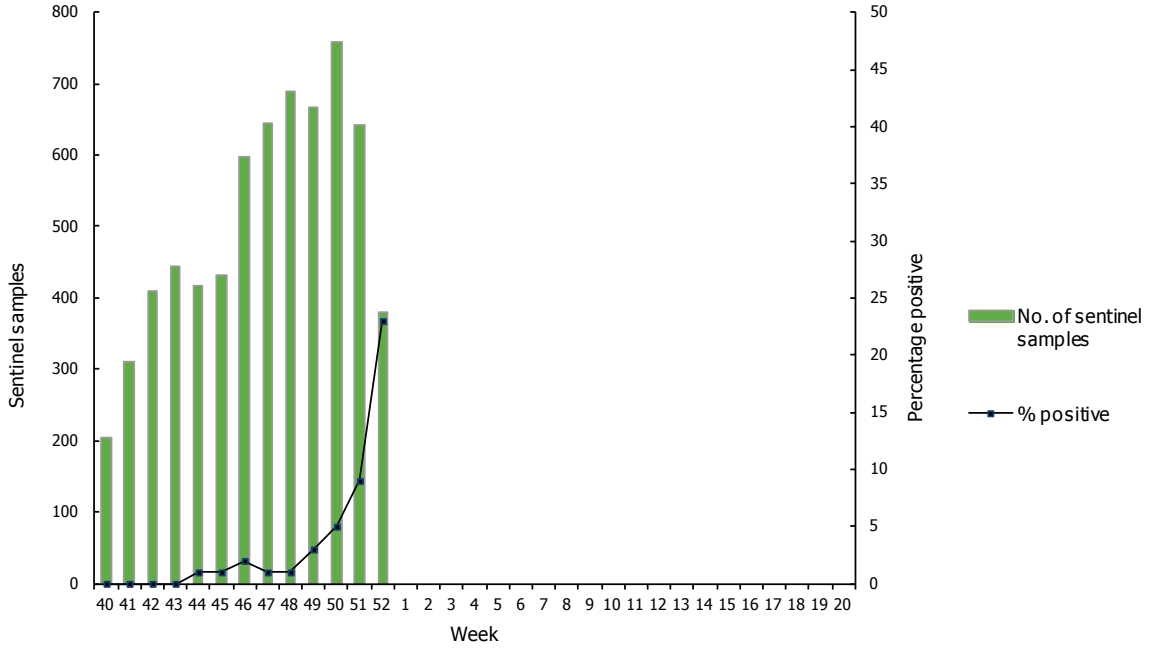


Figure 2: Number of sentinel specimens positive for influenza virus, by type, sub-type and week of report, weeks 40/2011–52/2011

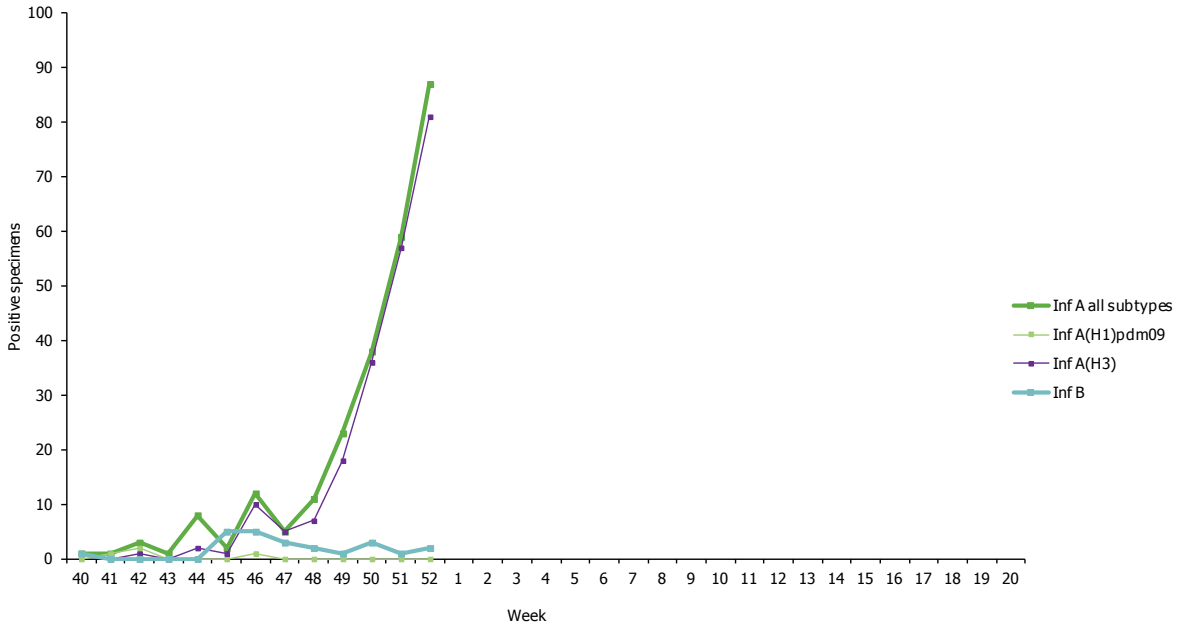


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, sub-type and week of report, weeks 40/2011–52/2011

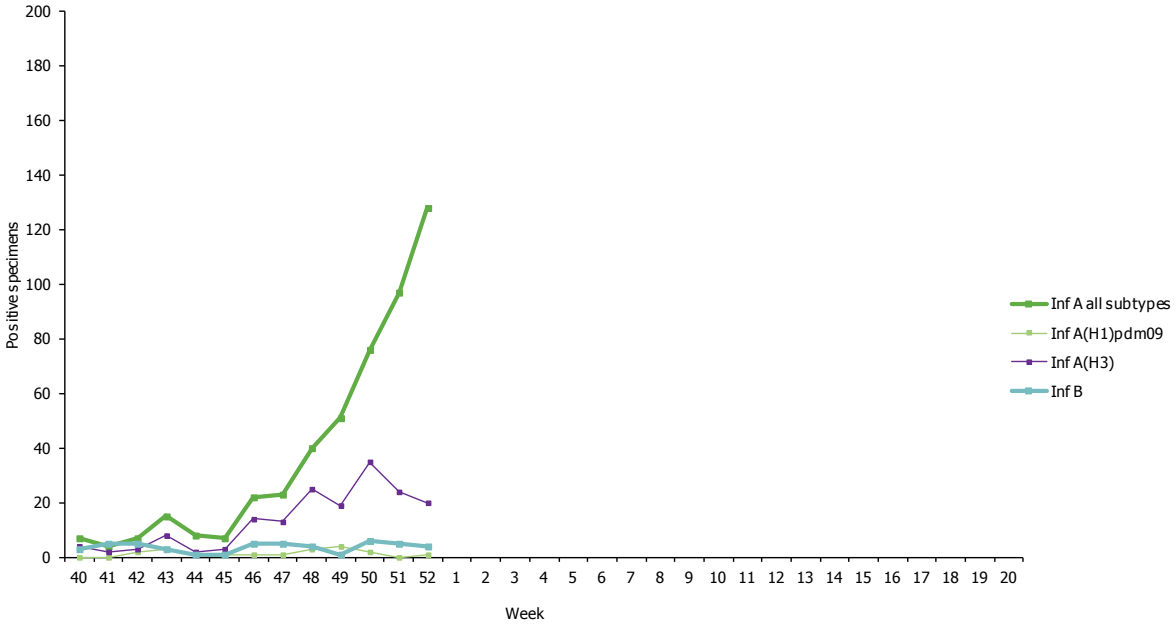


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–52/2011

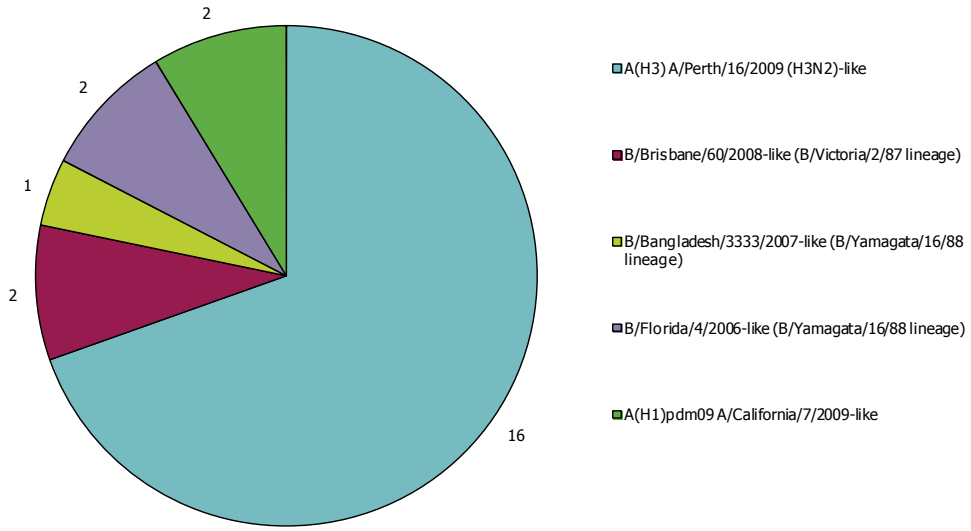


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–52/2011

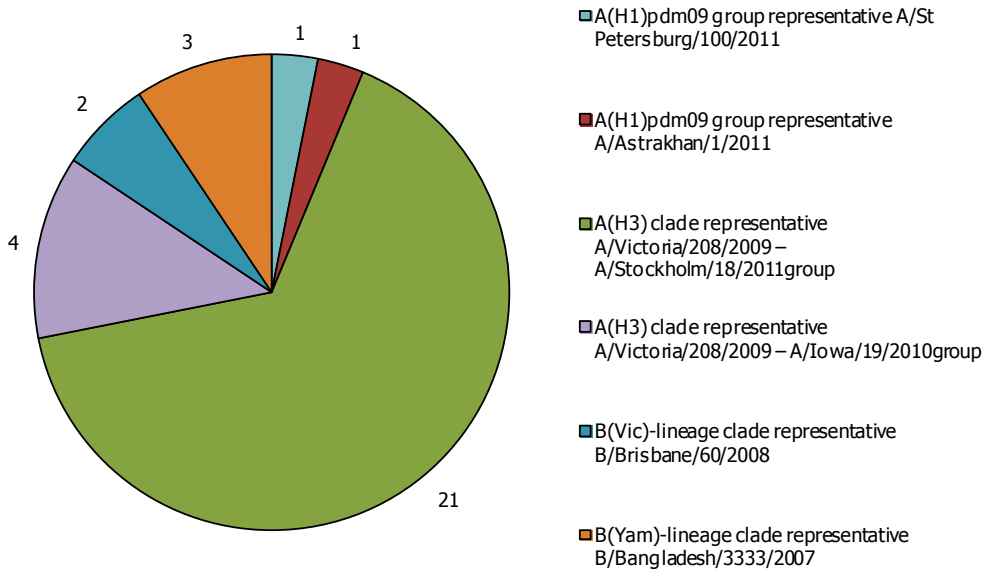
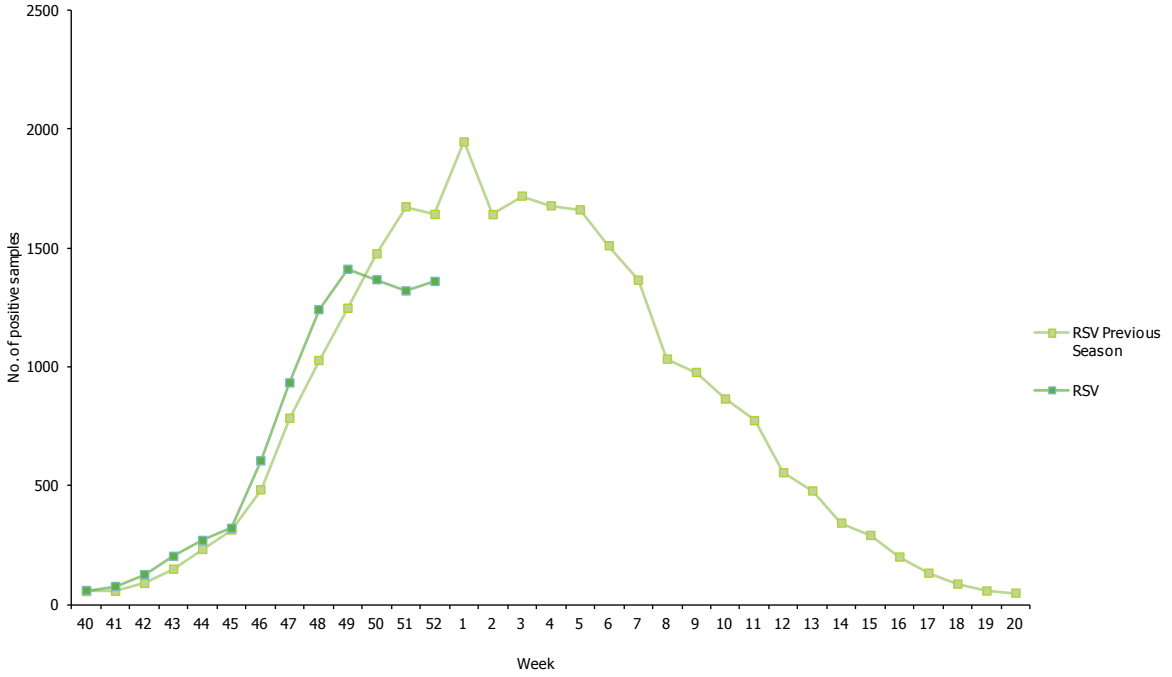


Table 3: Antiviral resistance by influenza virus type and sub-type, weeks 40/2011–52/2011

Virus type and subtype	Resistance to neuraminidase inhibitors				Resistance to M2 inhibitors	
	Oseltamivir		Zanamivir		Isolates tested	Resistant no. (%)
	Isolates tested	Resistant no. (%)	Isolates tested	Resistant no. (%)		
A(H3)	13	0	13	0	23	23 (100%)
A(H1)pdm09	2	0	2	0	2	2 (100%)
B	3	0	3	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 40/2011–52/2011



Country comments

Norway: during weeks 48 to 52, the number of influenza A virus detections in Norway increased. All except two of 57 influenza A viruses sub-typed in Norway so far this season have been of the H3 subtype.

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 117 SARI cases and four fatalities have been reported to TESSy by five countries (Table 4). Fifty-nine (57.8 %) of 102 patients for whom information was available were male (Table 5). Of the cases reported during week 52/2011, 18 were confirmed to be related to influenza virus infection. Of the cumulative cases since week 40/2011, 26 have had influenza virus infection confirmed and for those where typing and sub-typing has been completed, nine were due to A(H1N1)pdm09, seven to A(H3) and two to influenza B virus infection (Table 6).

Of the 97 patients with documented influenza vaccination status, 93 (95.9%) had not been vaccinated (Table 7).

Table 4: Cumulative number of SARI cases, weeks 40/2011–52/2011

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
Spain	4				
France	5				
Romania	87	1.5	4	0.07	5813728
Slovakia	6	0.11			5440078
United Kingdom*	15	0.03			59255492
Total	**117**		**4**		

* Without Wales

Figure 7: Number of SARI cases by week of onset, weeks 40/2011–52/2011

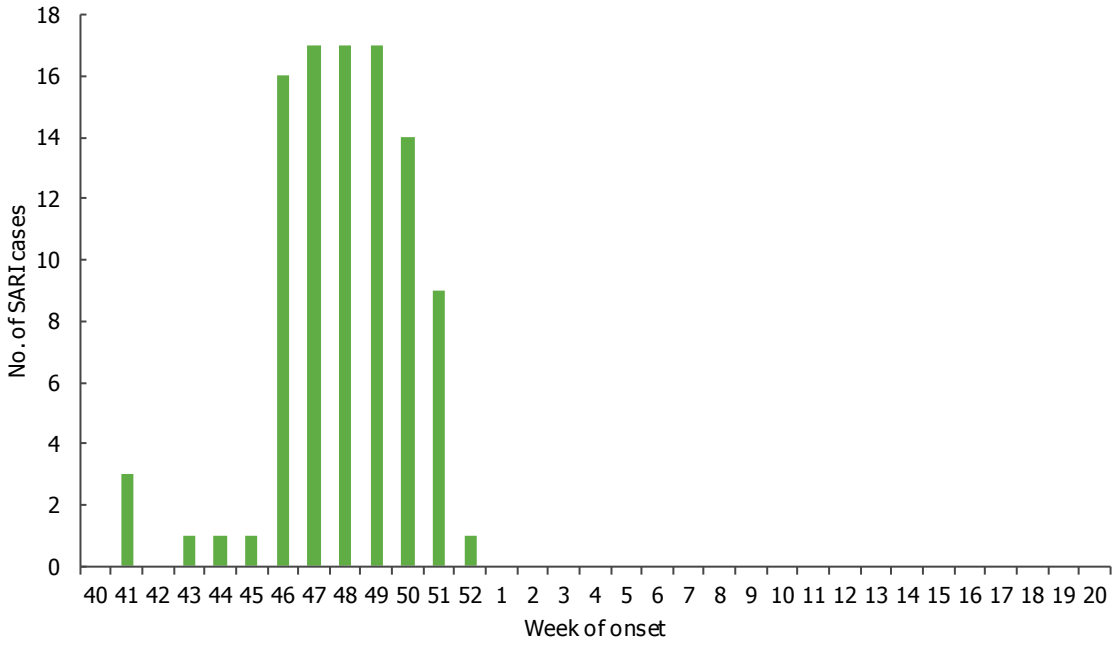


Table 5: Number of SARI cases by age and gender, weeks 40/2011–52/2011

Age groups	Male	Female	Unknown
Under 2	24	14	
2-17	15	14	
18-44	6	9	
45-59	6	1	
>=60	8	5	
Unknown			15
Total	**59**	**43**	**15**

Table 6: Number of SARI cases by influenza type and sub-type and other pathogens, week 52/2011 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	24
A(H1)pdm09		9
A(sub-typing not performed)		8
A(H3)	2	7
Influenza B		2
Other pathogen		1
Unknown	8	90
Total	**10**	**117**

Table 7: Number of SARI cases by influenza vaccination status, weeks 40/2011–52/2011

Vaccination status	Number Of cases	Percentage of cases
Both, monovalent 2009 pandemic H1N1 and seasonal vaccination	1	1
Not vaccinated	93	79
Seasonal 2010 vaccination	3	3
Unknown	20	17
TOTAL	**117**	

Country comments and specific information concerning hospitalised cases and mortality

This section is compiled from specific comments and published reports available from national websites (where indicated) and as such is intended to provide additional information on influenza-associated hospitalisations (including emergency hospital consultations), higher-level care load, and mortality.

Romania: Laboratory investigations have been performed for 89% of SARI cases. The first two influenza viruses A(H3) have been detected in SARI cases notified during week 52. One of the patients is a 6-month old girl with onset on 23 December 2011 and the other is a 6-year old boy with onset three days later. Both were reported by the same sentinel hospital and residence and incubation were in the same region of Romania. Neither of the patients has underlying risk conditions. To date, the total positivity rate for SARI cases has been 55.8% and the positivity rate for influenza in SARI cases 2.6%. The fourth death registered as a SARI case was negative for influenza and also for other etiologies (parainfluenza virus, hMPV, RSV, enterovirus, rhinovirus and coronaviruses).

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.