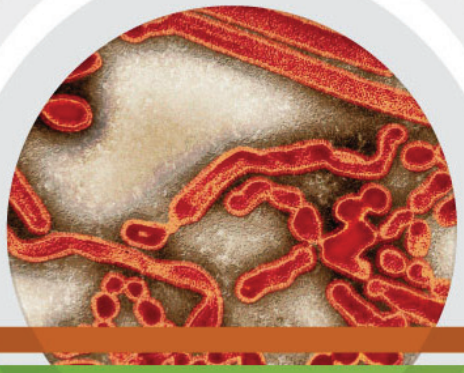


SURVEILLANCE REPORT

Weekly influenza surveillance overview

10 February 2012

Main surveillance developments in week 5/2012 (30 January – 5 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.

- Medium influenza activity was reported by 11 countries and increasing trends by 18 countries.
- Among 1 444 sentinel specimens, the percentage positive for influenza was 42% with a range of 3–85% across countries.
- Of 600 sentinel specimens that tested positive for influenza virus, 95.7% were type A and 4.3% were type B. Of the 782 sentinel and non sentinel influenza A viruses sub-typed, 97.7% were A(H3) and 2.3 % were A(H1)pdm09.
- Since the start of the season, 394 SARI cases have been reported from six countries. Of the cases with confirmed influenza, 80% were associated with A(H3), 13% with A(H1)pdm09 and 7% with B viruses.
- To date, no resistance to neuraminidase inhibitors (oseltamivir and zanamivir) has been reported this season.
- Influenza activity continued to increase in week 5, though with significant variation across Europe and no clear geographic progression. The dominant virus remains A(H3N2).

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Medium influenza activity was reported by nine countries and increasing trends in clinical activity were reported by 18 countries. This compared to 12 countries during the previous week. The pre-epidemic threshold was exceeded in 10 countries compared to six in the previous week. For more information, **click here**.

Virological surveillance: Of 600 positive sentinel specimens of influenza virus, 95.7% were type A and 4.3% were type B. For more information, **click here**.

Hospital surveillance of severe acute respiratory infection (SARI): In week 5/2012, three countries reported 32 SARI cases, of which 19 were influenza-related. Since the start of the season, 394 SARI cases have been reported from six countries. Of cases where influenza was found and typed/subtyped, 80% were associated with A(H3), 13% with A(H1)pdm09 and 7% with B viruses. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

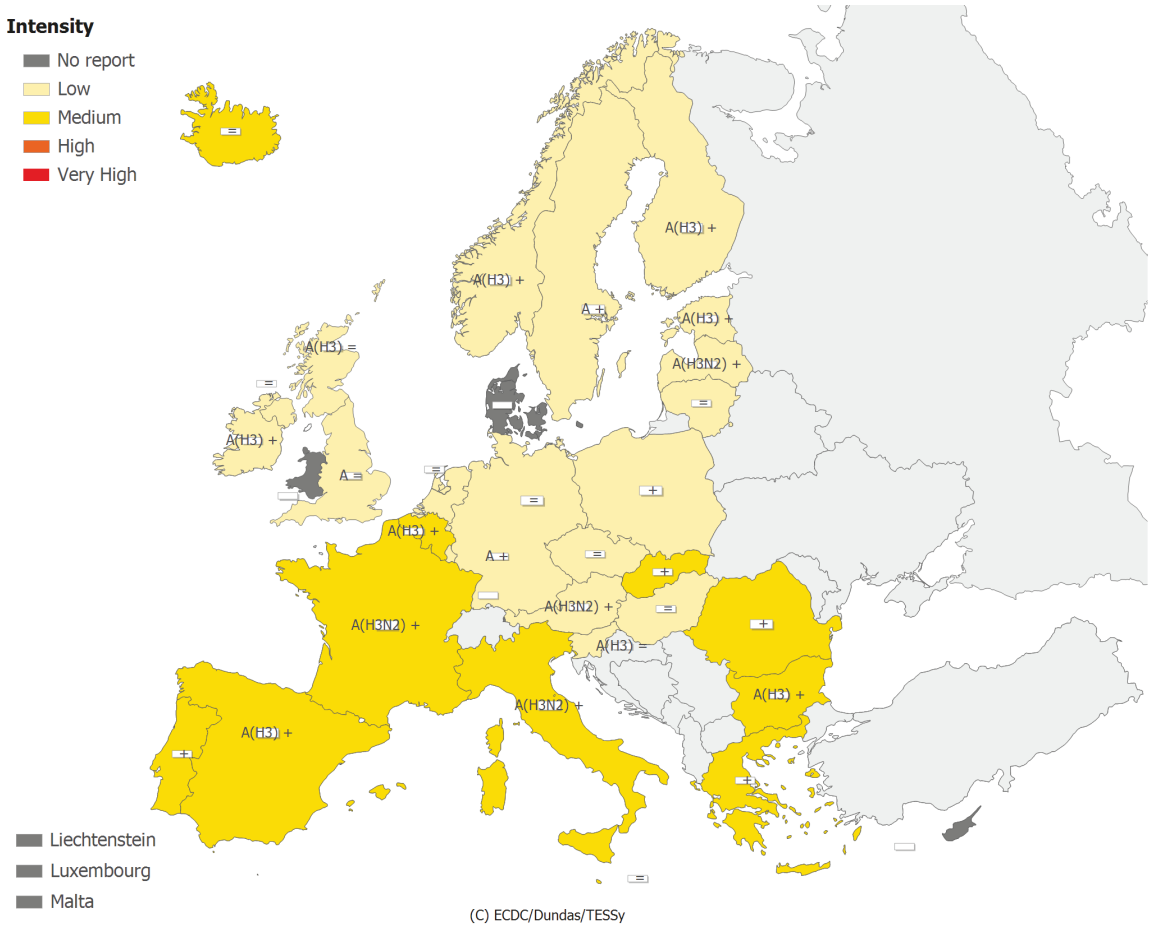
Weekly analysis – epidemiology

During week 05/2011, 27 countries reported clinical data. Low activity was reported by 16 countries. Medium activity was reported by 11 countries (Table 1, Map 1). The pre-epidemic threshold was significantly exceeded in Bulgaria, Cyprus, Iceland, Italy and Spain and marginally exceeded in Belgium, Greece, Norway, Romania and Sweden.

Geographic spread was reported as widespread by three countries, regional by six, local by eight, sporadic by eight and no activity was reported by one country (Table 1, Map 2).

Increasing trends in clinical activity were reported by 18 countries compared with 12 countries in week 4/2012, while stable trends were reported by nine countries (Table 1, Map 2).

Map 1: Intensity for week 5/2012



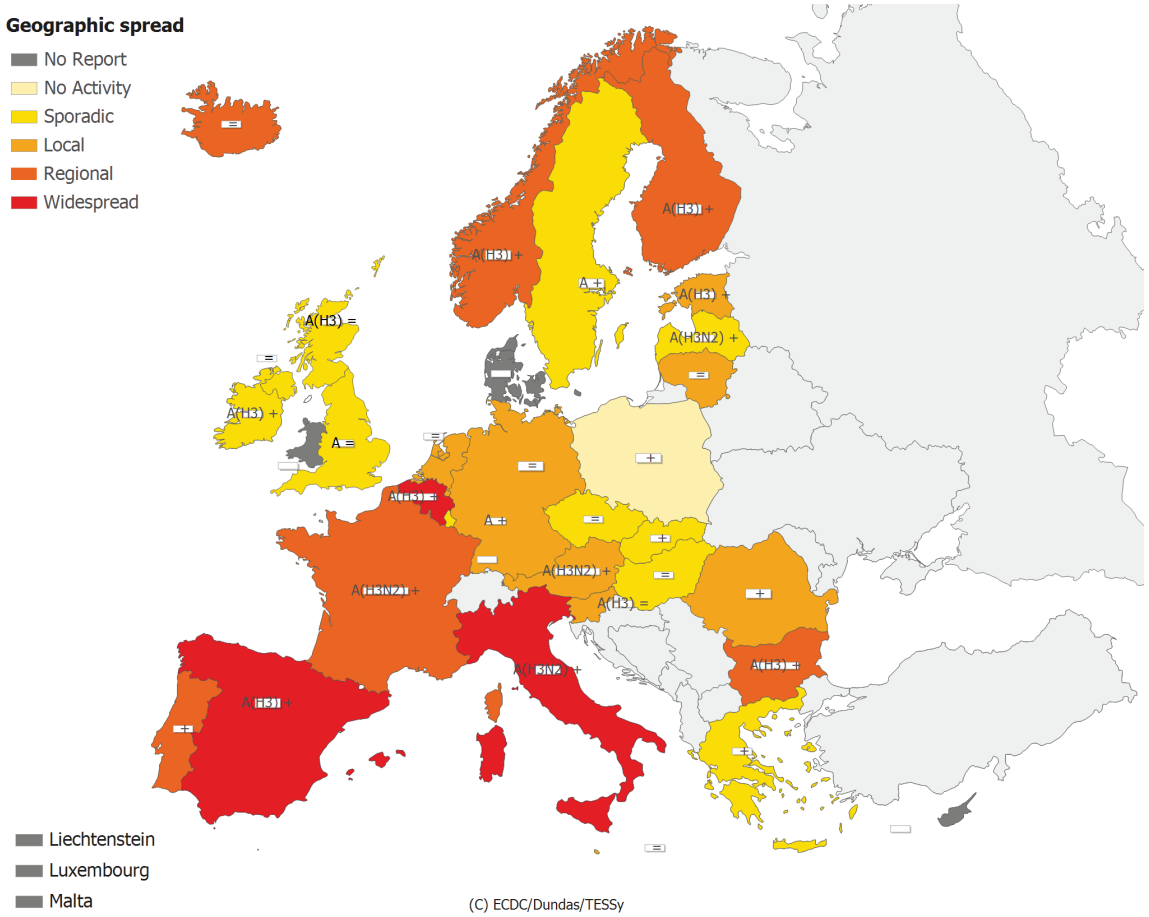
(C) ECDC/Dundas/TESSy

* 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(H3N2)	Type A, Subtype H3N2

Map 2: Geographic spread for week 5/2012



* 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(H3N2)	Type A, Subtype H3N2

Table 1: Epidemiological and virological overview by country, week 5/2012

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	Low	Local	Increasing	23	A(H3N2)	47.8	23.0	-	Graphs	Graphs
Belgium	Medium	Widespread	Increasing	15	A(H3)	66.7	163.0	2293.8	Graphs	Graphs
Bulgaria	Medium	Regional	Increasing	16	A(H3)	43.8	-	1785.5	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	Sporadic	Stable	16	None	18.8	35.4	923.1	Graphs	Graphs
Denmark				1	None	0.0	-	-	Graphs	Graphs
Estonia	Low	Local	Increasing	20	A(H3)	0.0	10.7	281.6	Graphs	Graphs
Finland	Low	Regional	Increasing	83	A(H3)	38.6	-	-	Graphs	Graphs
France	Medium	Regional	Increasing	159	A(H3N2)	45.9	-	2168.1	Graphs	Graphs
Germany	Low	Local	Stable	64	None	15.6	-	1157.9	Graphs	Graphs
Greece	Medium	Sporadic	Increasing	27	None	85.2	162.3	-	Graphs	Graphs
Hungary	Low	Sporadic	Stable	47	-	6.4	115.1	-	Graphs	Graphs
Iceland	Medium	Regional	Stable	-	-	0.0	40.2	-	Graphs	Graphs
Ireland	Low	Sporadic	Increasing	17	A(H3)	47.1	17.3	-	Graphs	Graphs
Italy	Medium	Widespread	Increasing	131	A(H3N2)	84.0	947.0	-	Graphs	Graphs
Latvia	Low	Sporadic	Increasing	1	A(H3N2)	0.0	14.1	1238.3	Graphs	Graphs
Lithuania	Low	Local	Stable	5	None	0.0	1.8	479.3	Graphs	Graphs
Luxembourg	Low	Sporadic	Increasing	10	A	20.0	-*	-*	Graphs	Graphs
Malta	Medium	Local	Stable	8	None	25.0	-*	-*	Graphs	Graphs
Netherlands	Low	Local	Stable	15	None	0.0	27.0	-	Graphs	Graphs
Norway	Low	Regional	Increasing	22	A(H3)	68.2	84.7	-	Graphs	Graphs
Poland	Low	No activity	Increasing	22	None	0.0	141.7	-	Graphs	Graphs
Portugal	Medium	Regional	Increasing	9	None	33.3	51.6	-	Graphs	Graphs
Romania	Medium	Local	Increasing	30	None	53.3	5.3	766.3	Graphs	Graphs
Slovakia	Medium	Sporadic	Increasing	6	-	16.7	186.8	1618.2	Graphs	Graphs
Slovenia	Low	Local	Stable	23	A(H3)	39.1	13.8	1234.8	Graphs	Graphs
Spain	Medium	Widespread	Increasing	497	A(H3)	46.1	212.3	-	Graphs	Graphs
Sweden	Low	Sporadic	Increasing	49	A	26.5	7.3	-	Graphs	Graphs
UK - England	Low	Sporadic	Stable	94	A	19.1	10.1	415.4	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Stable	5	-	20.0	21.9	469.5	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	29	A(H3)	3.4	12.0	524.7	Graphs	Graphs
UK - Wales				-	-	0.0	-	-		
Europe				1444		41.6				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 5/2012, 27 countries reported virological data. Of 1 444 sentinel specimens tested, 600 (41.6%) were positive for influenza virus, i.e. almost the same percentage as in the preceding week (Table 1, Figure 1). Percentages of positive specimens ranged from 3.4% to 85.2% in twenty-one countries. In addition, 938 non-sentinel source specimens, e.g. specimens collected for diagnostic purposes in hospitals, were found to be positive for influenza virus.

Of the 1 538 influenza viruses detected from sentinel and non-sentinel sources during week 5/2012, 1 482 (96.4%) were type A and 56 (3.6%) were type B. Of the 782 influenza A viruses subtyped, 764 (97.7%) were A(H3) and 18 (2.3 %) were A(H1)pdm09 (Table2).

Of the 5 469 influenza virus detections in sentinel and non-sentinel specimens since week 40/2011, 5 223 (95.5%) were type A and 246 (4.5%) were type B viruses. Of 3 313 influenza A viruses subtyped, 3 193 (96.4%) were A(H3) viruses and 120 (3.6%) were A(H1)pdm09 (Table 2, Figures 2 & 3). The lineage of 27 influenza B viruses has been determined: 16 (59.3%) were B-Victoria and 11 (40.7%) were B-Yamagata lineage (Table 2).

Since week 40/2011, 101 antigenic characterisations of viruses have been reported: 90 as A/Perth/16/2009 (H3N2)-like; three as B/Brisbane/60/2008-like (Victoria lineage); three as B/Florida/4/2006-like (Yamagata lineage); three as B/Bangladesh/3333/2007-like (Yamagata lineage) and two as A/California/7/2009 (H1N1)-like (Figure 4).

Since week 40/2011, 323 genetic characterisations of viruses have been reported, of which the majority (57.9%) were A(H3) viruses falling in 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.

From week 40/2011 to week 5/2012, antiviral susceptibility data from Germany, the Netherlands, Norway, Portugal, Romania and Sweden have been reported to the TESSy and EUROFLU antiviral databases. 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 blocker susceptibility 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 5/2012, 18 countries reported 879 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 40/2011–5/2012

Virus type/subtype	Current period sentinel	Current period non-sentinel	Season sentinel	Season non-sentinel
Influenza A	574	908	2126	3097
A(H1)pdm09	9	9	29	91
A(H3)	479	285	1902	1291
A(sub-typing not performed)	86	614	195	1715
Influenza B	26	30	98	148
B(Vic) lineage	1	2	4	12
B(Yam) lineage	2	0	8	3
Unknown lineage	23	28	86	133
Total Influenza	**600**	**938**	**2224**	**3245**

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 40/2011–5/2012

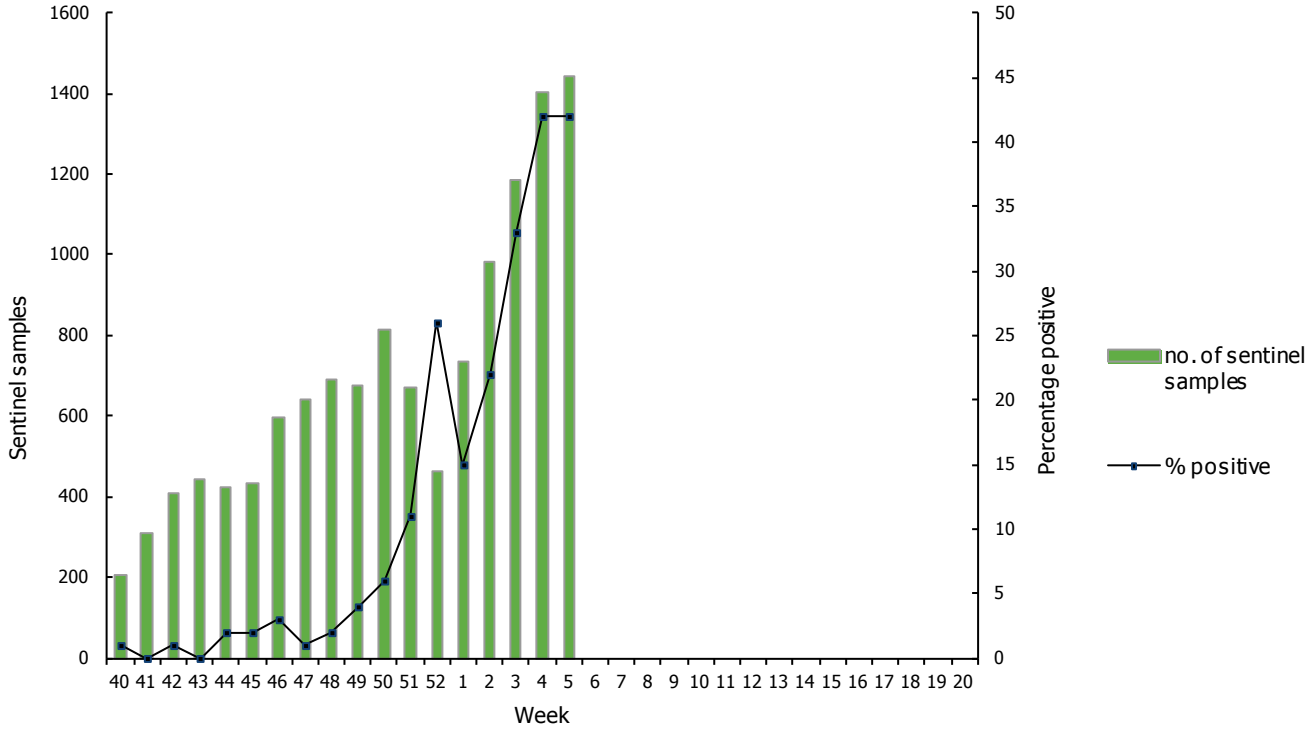


Figure 2: Number of sentinel specimens positive for influenza virus, by type, subtype and week of report, weeks 40/2011–5/2012

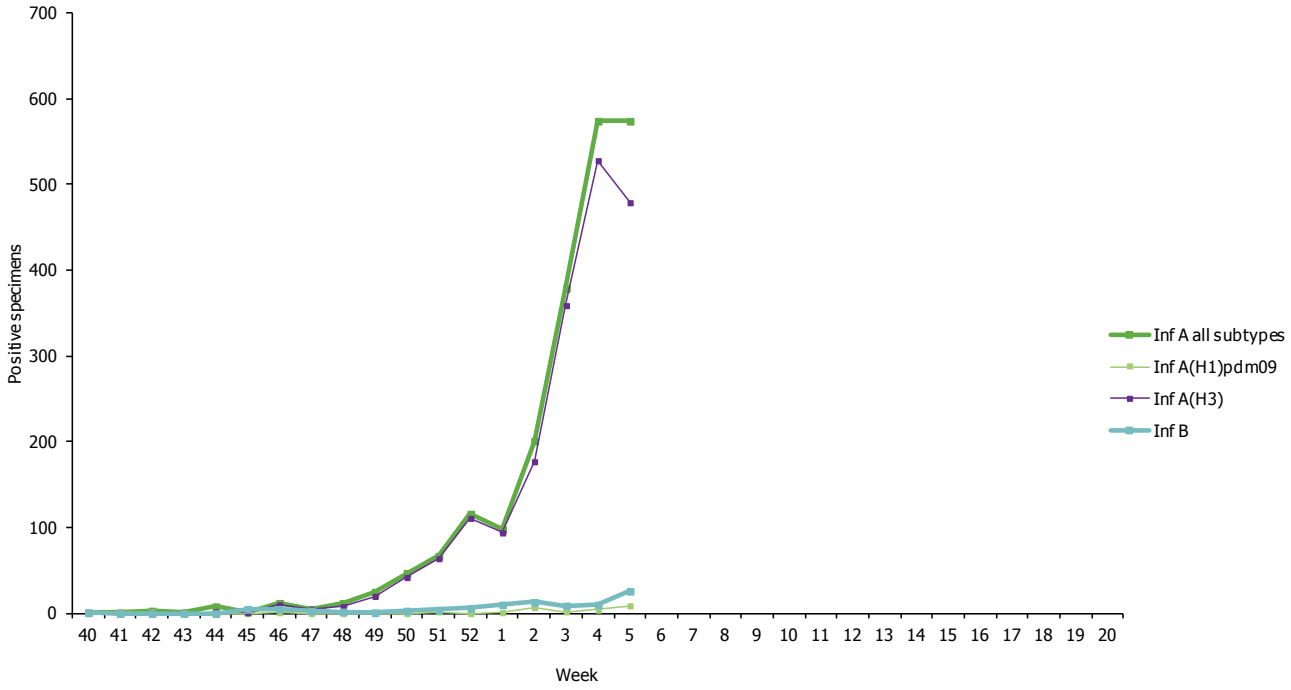


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2011–5/2012

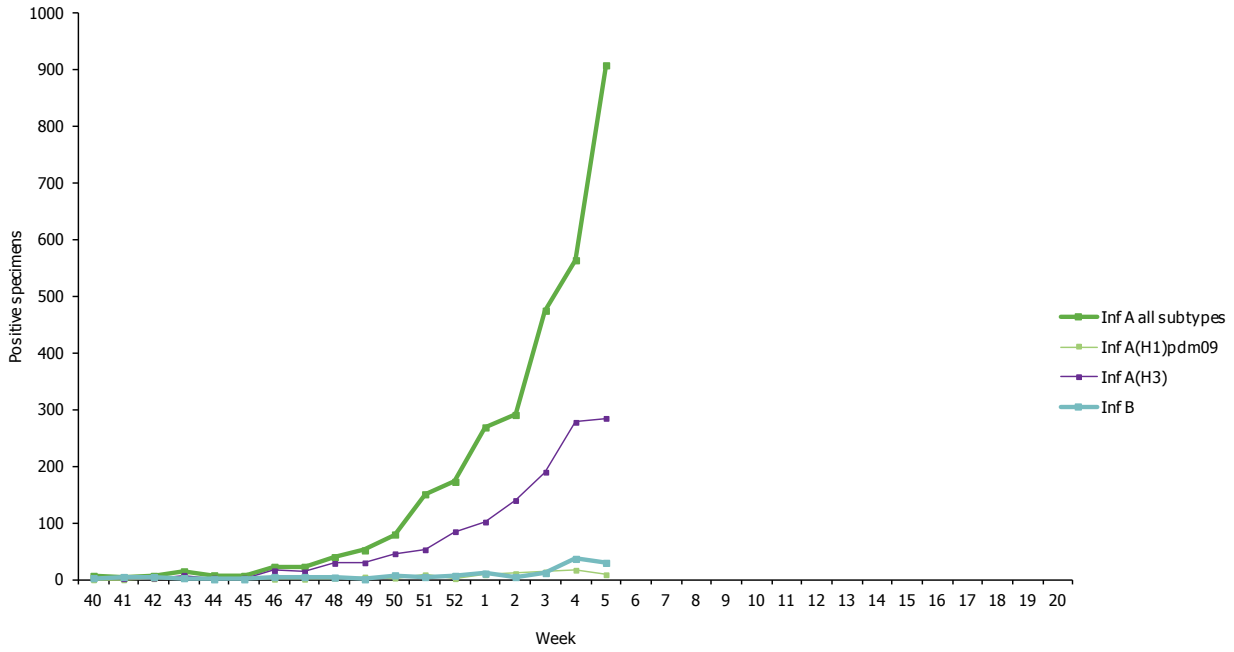


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–5/2012

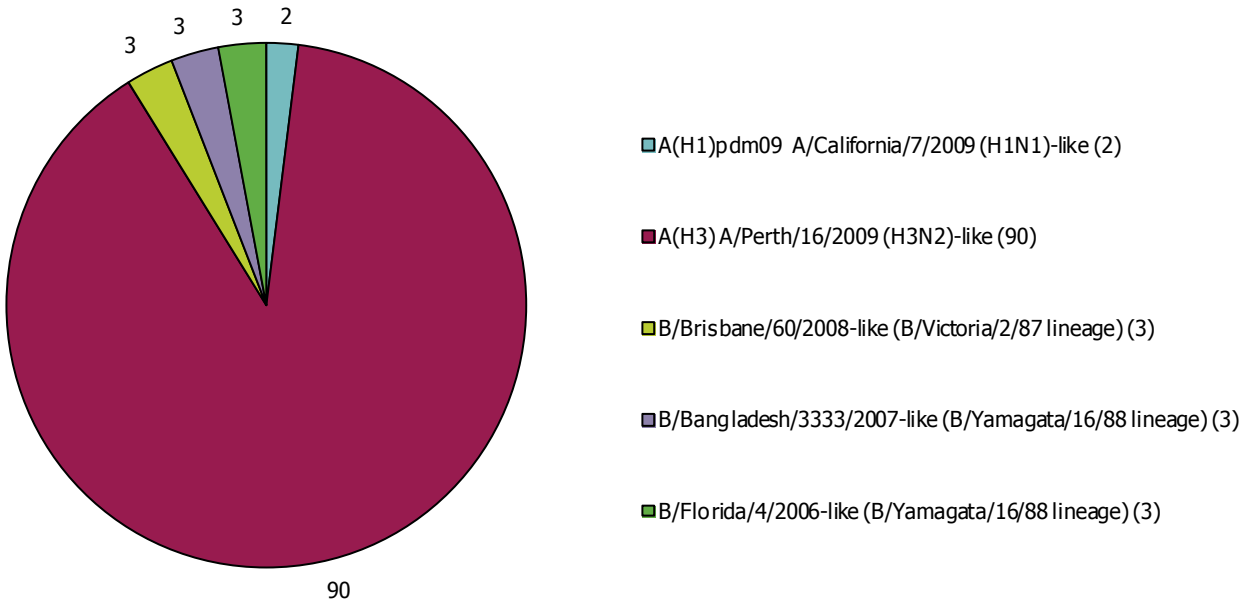


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–5/2012

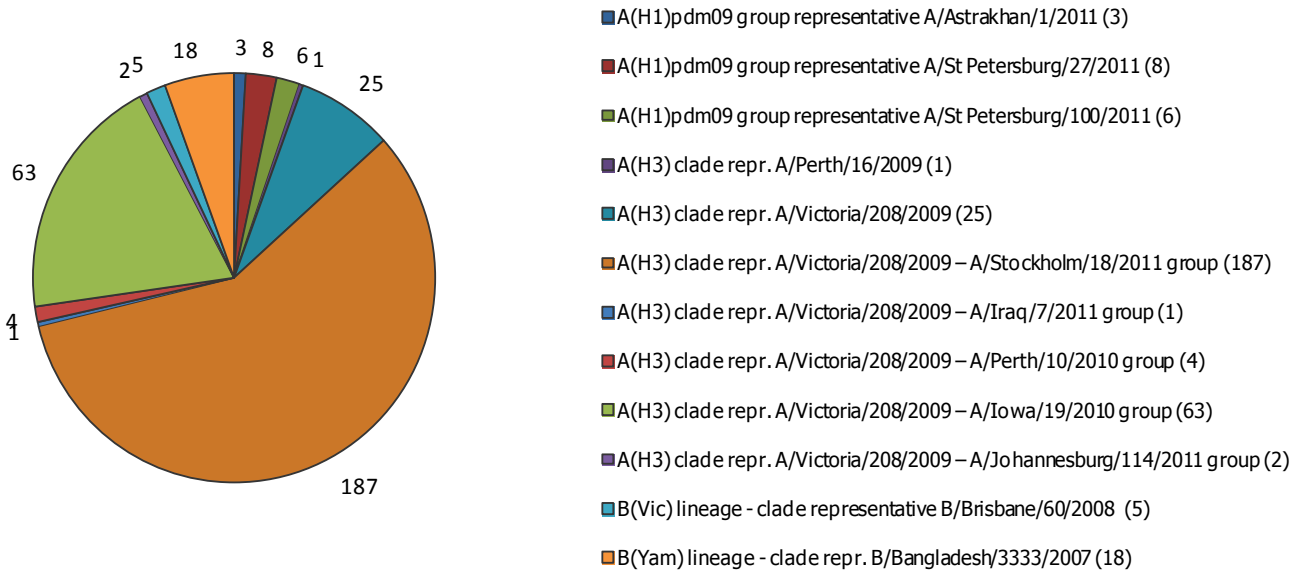
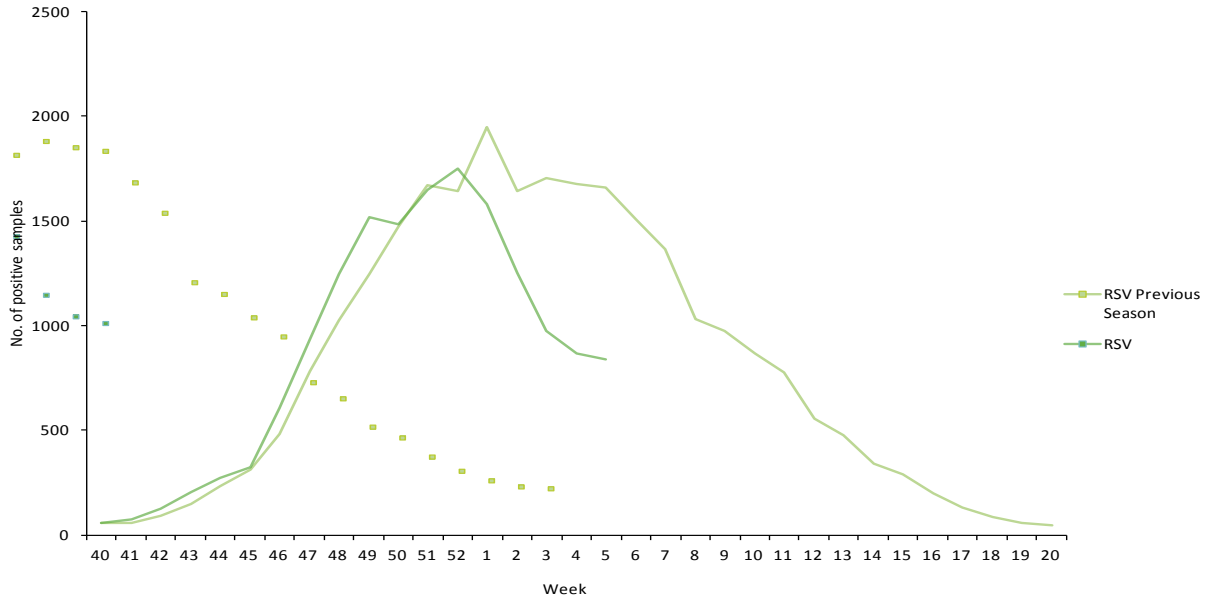


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2011–5/2012

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)	46	0	44	0	75	75 (100%)
A(H1N1)2009	15	0	15	0	7	7 (100%)
B	7	0	6	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 40/2011–5/2012



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

In week 5/2012, 32 SARI cases were reported to TESSy by three countries (France, Romania and Spain). The cumulative numbers since week 40/2011 are 394 cases and 15 related-fatalities (Table 4).
Of 330 patients for whom the information was available, 181 (54.8%) were male (Table 5).

Of 32 SARI cases reported, 19 were related to influenza virus infection (Table 6). Spain reported 13 influenza cases of which one fatality was related to an A(H3) infection. France reported one A(H3) case and Romania reported three A(H3N2) cases and 13 SARI cases of unknown cause.

Since week 40/2012, 394 SARI cases have been reported by six countries (table 6). In the 159 cases where the results of influenza typing and/or sub-typing had been done, 128 (80%) were associated with A(H3) infection, 20 (13%) with A(H1N1)pdm09 and 11 (7%) with B viruses.

Of 115 influenza confirmed SARI cases for whom the vaccination status was available, 33 (28.7%) were vaccinated against influenza (Table 7).

Heart and lung conditions represented 28.8% of underlying diseases, although 43.5% of patients had no underlying condition (Figure 8).

Table 4: Cumulative number of SARI cases, weeks 40/2011–5/2012

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	3		2		
Spain	118		8		
France	18		1		
Slovakia	9	0.17			5440078
United Kingdom	62	0.1			59255492
Romania	184	3.16	4	0.07	5813728
Total	**394**		**15**		

Figure 7: Number of SARI cases by week of onset, weeks 40/2011–5/2012

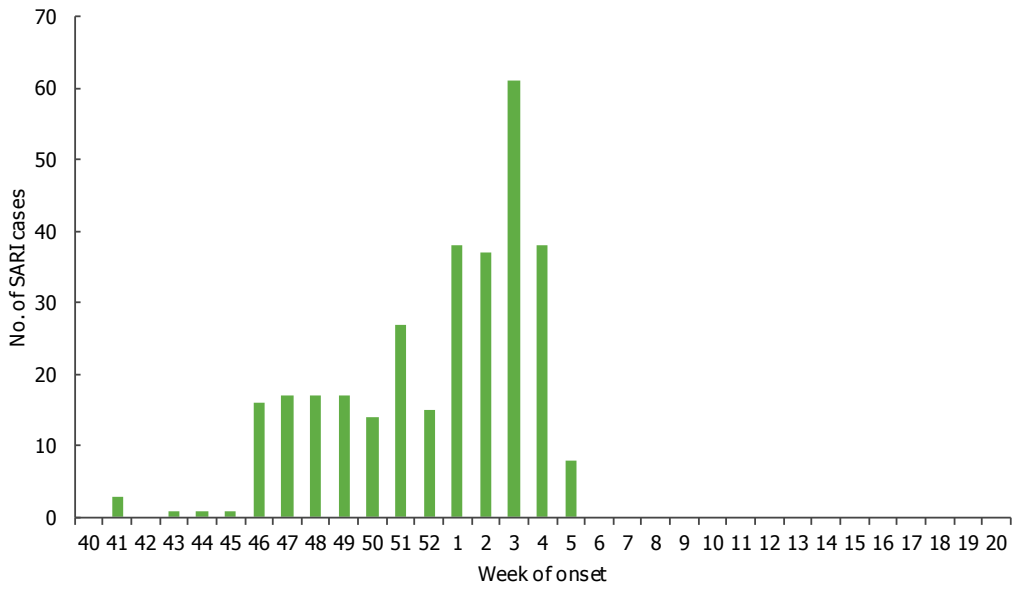


Table 5: Number of SARI cases by age and gender, weeks 40/2011–5/2012

Age groups	Male	Female	Other (e.g. transsexual)	Unknown
Under 2	54	33		
2-17	45	42		1
18-44	21	25		
45-59	17	12		
>=60	43	37		1
Unknown	1			62
Total	**181**	**149**		**64**

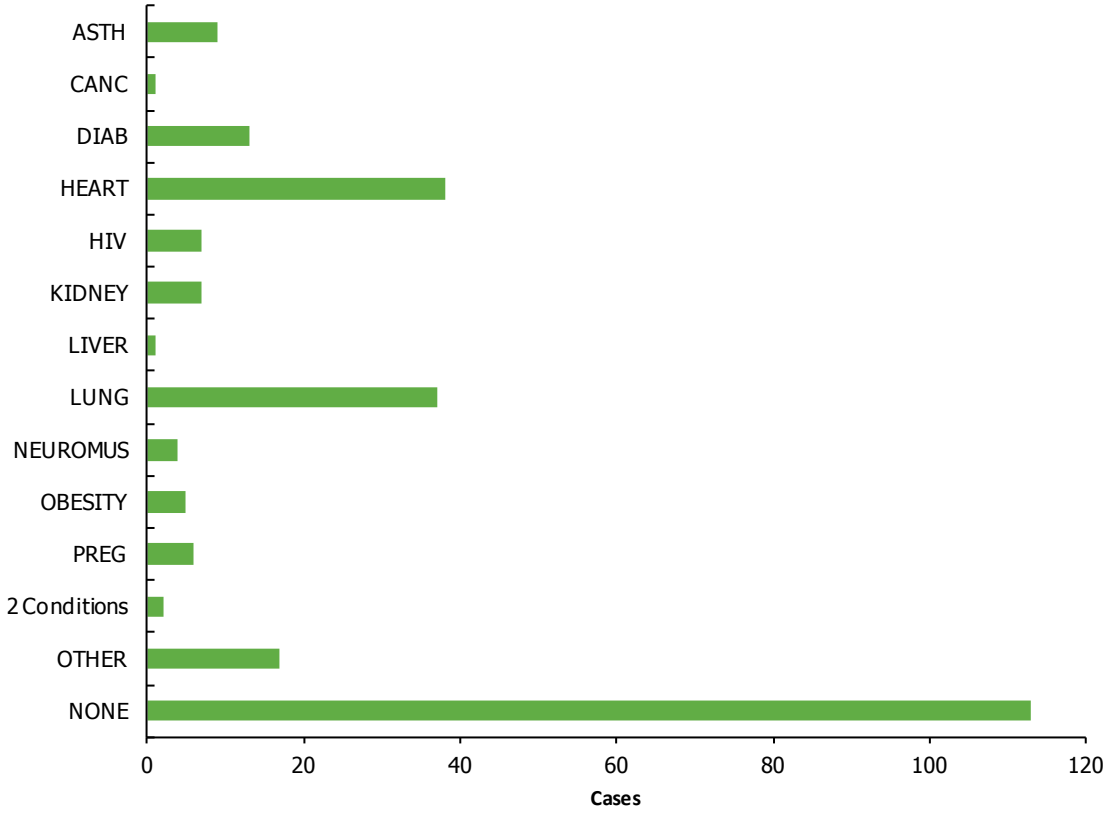
Table 6: Number of SARI cases by influenza type and subtype and other pathogens, week 5/2012 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	19	209
A(H1)pdm09		20
A(H1)		
A(H3)	15	128
A(sub-typing not performed)	4	61
Influenza B		11
Other pathogen		1
Unknown	13	173
Total	32	394

Table 7: Number of SARI cases by influenza vaccination status, weeks 40/2011–5/2012

Vaccination status	No. of influenza cases	Percentage of cases
Seasonal vaccination	13	5.9
Vaccinated for A(H1N1)2009	3	1.4
Fully vaccinated for both seasonal and A(H1N1)2009	20	9.1
Not vaccinated	79	35.9
Unknown	105	47.7
TOTAL	**220**	

Figure 8: Number of SARI cases by underlying condition, weeks 40/2011–5/2012



Note: Other represents any underlying condition other than: asthma (ASTH), cancer (CANC), diabetes (DIAB), chronic heart disease (HEART), HIV/other immune deficiency (HIV), kidney-related conditions (KIDNEY), liver-related conditions (LIVER), chronic lung disease (LUNG), neurocognitive disorder (including seizure; NEUROCOG), neuromuscular disorder (NEUROMUS), obesity (BMI between 30 and 40; OBESITY), morbid obesity (BMI above 40; OBESITYMORB) or pregnancy (PREG). NONE is reported if there were no underlying conditions.

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.