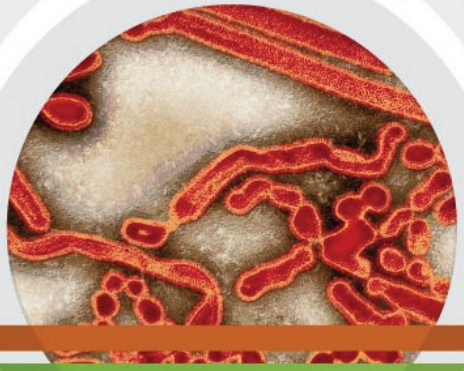


SURVEILLANCE REPORT

Weekly influenza surveillance overview

17 February 2012

Main surveillance developments in week 6/2012 (6–12 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 13 countries and increasing trends by 17 countries.
- Among 1 718 sentinel specimens, the positivity percentage for influenza was 46%, which is around the same as in week 5. This was the first week this season without a clear increase (apart from the Christmas period). There were significant differences across countries (with more than 30 sentinel specimens analysed) ranging from 16–84%.
- Of the 2 025 influenza viruses detected from sentinel and non-sentinel sources during week 6/2012, 96% were type A and 4% were type B. Of the 1 015 influenza A viruses subtyped, 99% were A(H3) and 1% were A(H1)pdm09.
- Since the start of the season, 493 SARI cases have been reported by six countries, 300 of which were related to influenza. Of the cases with influenza typing/subtyping results available, 85% were associated with A(H3), 9% with A(H1)pdm09 and 6% with B viruses.
- No resistance to the neuraminidase inhibitors (oseltamivir and zanamivir) has been reported so far this season.
- Influenza activity continued to increase in week 6, though with significant variation in timing across Europe and no clear geographic progression this season. The dominant virus remains A(H3).

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Medium influenza activity was reported by 13 countries and increasing trends in clinical activity were reported by 17 countries. For more information, **click here**.

Virological surveillance: Of 790 sentinel specimens testing positive for influenza virus, 94% were type A and 6% were type B. For more information, **click here**.

Hospital surveillance of severe acute respiratory infection (SARI):
Since week 40/2011, six countries have reported 493 SARI cases, 300 of which were related to influenza. For more information, **click here**.

Sentinel surveillance (ILI/ARI)

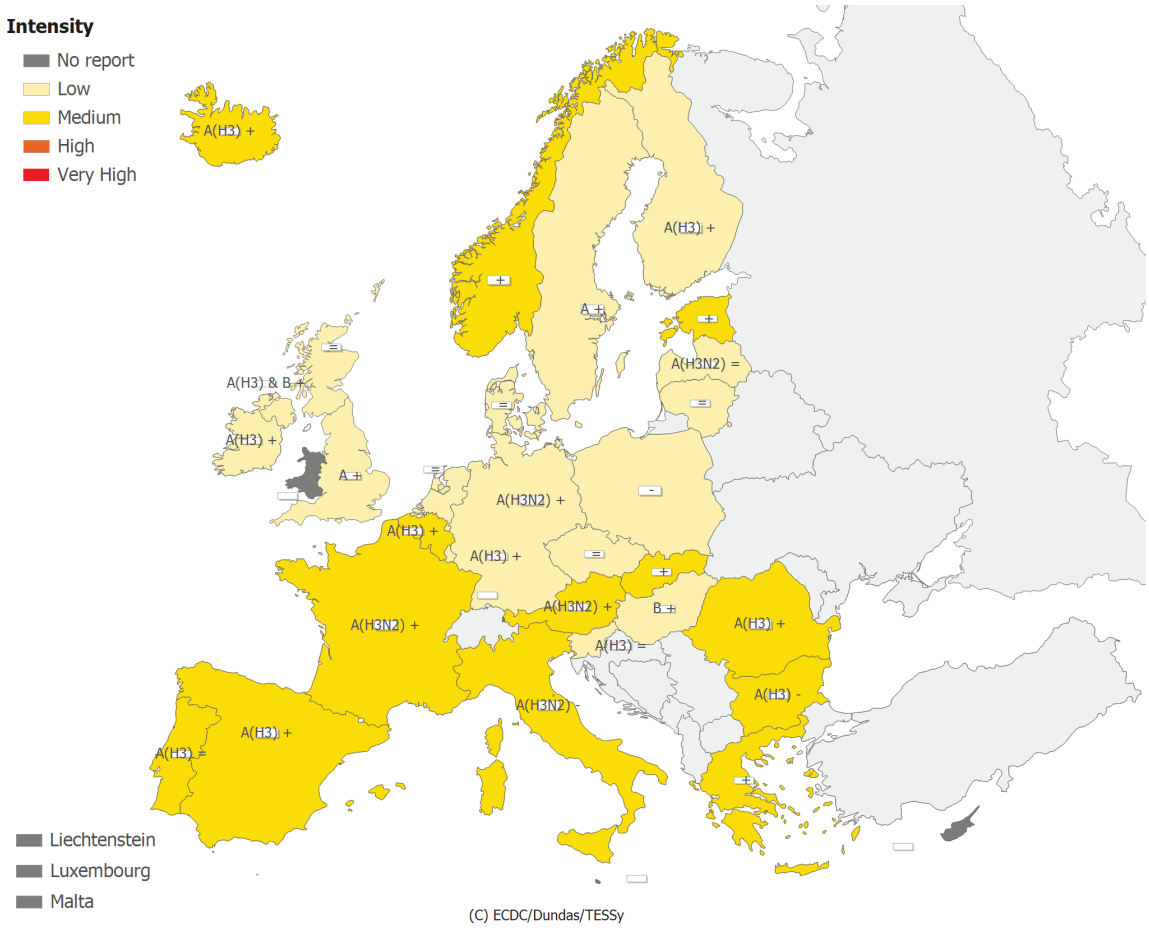
Weekly analysis – epidemiology

During week 6/2012, 27 countries reported clinical data. Low activity was reported by 14 countries. Medium intensity was reported by 13 countries (Austria, Belgium, Bulgaria, Estonia, France, Greece, Iceland, Italy, Norway, Portugal, Spain, Romania and Slovakia), which is two more than in week 5/2012 (Table 1, Map 1). Italy and Spain have reported medium intensity for five consecutive weeks.

Geographic spread was reported as widespread by seven countries (Belgium, France, Italy, Norway, Portugal, Slovenia and Spain), regional by seven, local by six and sporadic by eight. One country reported no activity (Table 1, Map 2).

Increasing trends in clinical activity were reported by 17 countries, while stable trends were reported by seven countries and decreasing trends by three countries (Bulgaria, Italy and Poland) (Table 1, Map 2).

Map 1: Intensity for week 6/2012

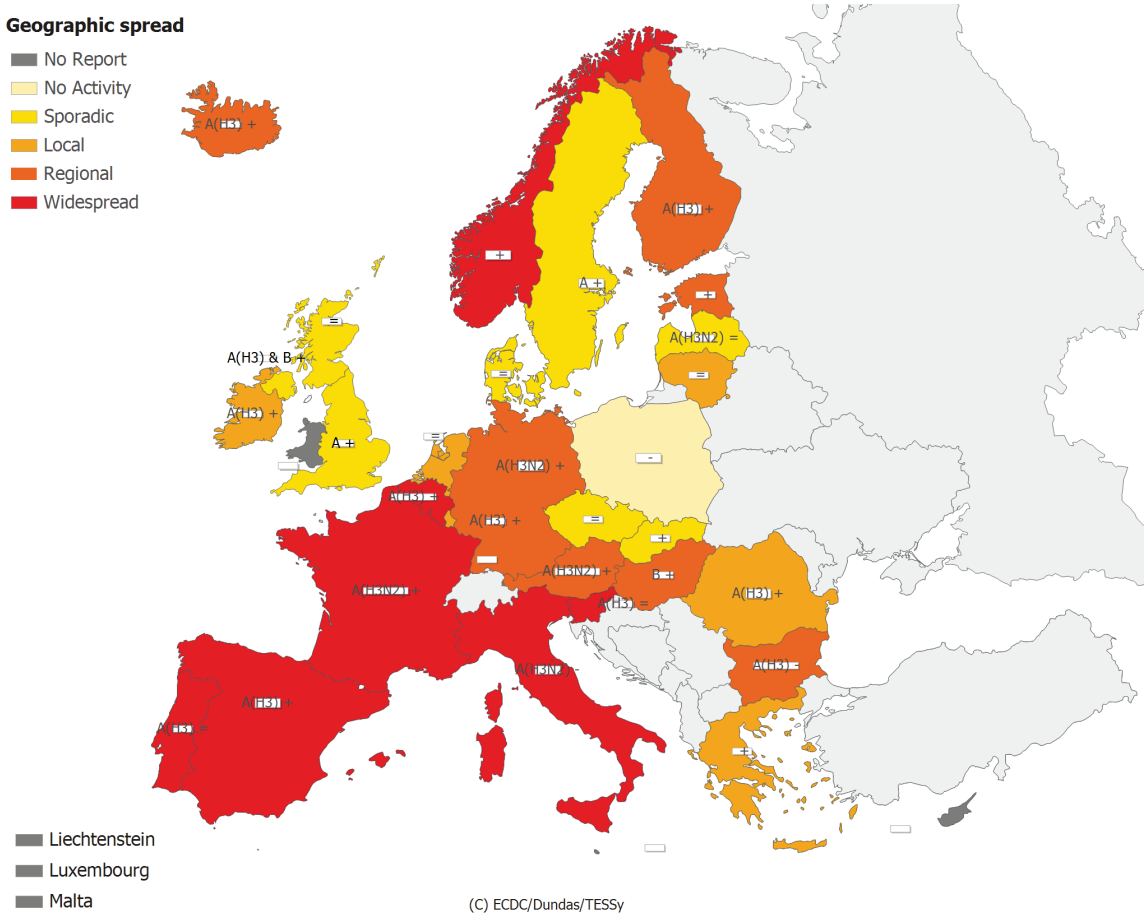


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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
		B	Type B

Map 2: Geographic spread for week 6/2012



(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	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
B	Type B

Table 1: Epidemiological and virological overview by country, week 6/2012

Country	Intensity	Geographic spread	Trend	No. of sentinel specimens	Dominant type	Percentage positive*	ILI per 100 000	ARI per 100 000	Epidemio-logical overview	Virological overview
Austria	Medium	Regional	Increasing	55	A(H3N2)	54.5	28.9	-	Graphs	Graphs
Belgium	Medium	Widespread	Increasing	72	A(H3)	55.6	246.5	2550.0	Graphs	Graphs
Bulgaria	Medium	Regional	Decreasing	1	A(H3)	100.0	-	1476.7	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Low	Sporadic	Stable	16	None	31.3	39.0	955.9	Graphs	Graphs
Denmark	Low	Sporadic	Stable	5	None	20.0	43.4	-	Graphs	Graphs
Estonia	Medium	Regional	Increasing	16	-	12.5	11.4	314.1	Graphs	Graphs
Finland	Low	Regional	Increasing	77	A(H3)	39.0	-	-	Graphs	Graphs
France	Medium	Widespread	Increasing	218	A(H3N2)	43.6	-	2203.2	Graphs	Graphs
Germany	Low	Regional	Increasing	71	A(H3N2)	23.9	-	1340.9	Graphs	Graphs
Greece	Medium	Local	Increasing	37	None	83.8	219.1	-	Graphs	Graphs
Hungary	Low	Regional	Increasing	50	B	16.0	156.8	-	Graphs	Graphs
Iceland	Medium	Regional	Increasing	0	A(H3)	0.0	59.7	-	Graphs	Graphs
Ireland	Low	Local	Increasing	23	A(H3)	69.6	26.2	-	Graphs	Graphs
Italy	Medium	Widespread	Decreasing	158	A(H3N2)	60.1	883.2	-	Graphs	Graphs
Latvia	Low	Sporadic	Stable	0	A(H3N2)	0.0	9.3	1250.5	Graphs	Graphs
Lithuania	Low	Local	Stable	2	None	0.0	1.8	459.5	Graphs	Graphs
Luxembourg	Low	Local	Increasing	25	A(H3)	32.0	-*	-*	Graphs	Graphs
Malta				-	-	0.0	-	-		
Netherlands	Low	Local	Stable	18	None	0.0	47.8	-	Graphs	Graphs
Norway	Medium	Widespread	Increasing	24	-	62.5	113.5	-	Graphs	Graphs
Poland	Low	No activity	Decreasing	23	None	8.7	126.5	-	Graphs	Graphs
Portugal	Medium	Widespread	Stable	18	A(H3)	44.4	51.7	-	Graphs	Graphs
Romania	Medium	Local	Increasing	37	A(H3)	62.2	7.0	824.5	Graphs	Graphs
Slovakia	Medium	Sporadic	Increasing	1	None	0.0	225.8	1809.5	Graphs	Graphs
Slovenia	Low	Widespread	Stable	20	A(H3)	45.0	6.2	1129.9	Graphs	Graphs
Spain	Medium	Widespread	Increasing	573	A(H3)	54.1	249.7	-	Graphs	Graphs
Sweden	Low	Sporadic	Increasing	59	A	44.1	9.1	-	Graphs	Graphs
UK - England	Low	Sporadic	Increasing	89	A	18.0	15.6	476.3	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Increasing	2	A(H3) & B	0.0	25.9	537.1	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	28	None	7.1	13.6	541.8	Graphs	Graphs
UK - Wales				-	-	0.0	-	-		
Europe				1718		46.0				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 6/2012, 27 countries reported virological data. Of 1 718 sentinel specimens tested, 790 (46.0%) were positive for influenza virus (Table 1, Figure 1), with 93.9% being of type A and 6.1% type B (Table 2). In sixteen countries percentages of positive specimens were higher than 30%. In addition, 1 235 non-sentinel source specimens (specimens collected for diagnostic purposes in hospitals) were found to be positive for influenza virus. There were significant differences across countries, ranging from 16–84% where countries had more than 30 sentinel specimens analysed.

Of the 2 025 influenza viruses detected from sentinel and non-sentinel sources during week 6/2012, 1 947 (96.1%) were type A and 78 (3.9%) were type B. Of the 1 015 influenza A viruses sub-typed, 1 004 (98.9%) were A(H3) and 11 (1.1 %) were A(H1)pdm09 (Table2).

Of the 7 967 influenza virus detections in sentinel and non-sentinel specimens since week 40/2011, 7 635 (95.8%) were type A and 332 (4.2%) were type B viruses. Of 4 792 influenza A viruses sub-typed, 4 657 (97.2%) were A(H3) viruses and 135 (2.8%) were A(H1)pdm09 (Table 2, Figures 2 & 3). The lineage of 35 influenza B viruses has been determined: 21 (60.0%) were B-Victoria and 14 (40.0%) were B-Yamagata lineage (Table 2).

Since week 40/2011, 140 antigenic characterisations of viruses have been reported: 126 (91.3%) as A/Perth/16/2009 (H3N2)-like; five as B/Brisbane/60/2008-like (Victoria lineage); three as B/Florida/4/2006-like (Yamagata lineage); four as B/Bangladesh/3333/2007-like (Yamagata lineage) and two as A/California/7/2009 (H1N1)-like (Figure 4).

Since week 40/2011, 425 genetic characterisations of viruses have been reported, of which the majority (57.9%) were A(H3) viruses coming 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. Since week 40/2011, 375 (88.2%) of the genetically characterised and reported viruses have been A(H3) viruses.

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. These and many other data and analyses will feed into the WHO Consultation on the Composition of Influenza Virus Vaccines for the Northern Hemisphere 2012-2013 season, taking place on 20–22 February 2012.

Between week 40/2011 and week 6/2012, antiviral susceptibility data was reported from 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. 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 6/2012, 16 countries reported 727 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 40/2011–6/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	742	1205	3163	4472
A(H1)pdm09	2	9	35	100
A(H3)	626	378	2845	1812
A(sub-typing not performed)	114	818	283	2560
Influenza B	48	30	151	181
B(Vic) lineage	3	2	7	14
B(Yam) lineage	1	1	9	5
Unknown lineage	44	27	135	162
Total Influenza	**790**	**1235**	**3314**	**4653**

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 40/2011–6/2012

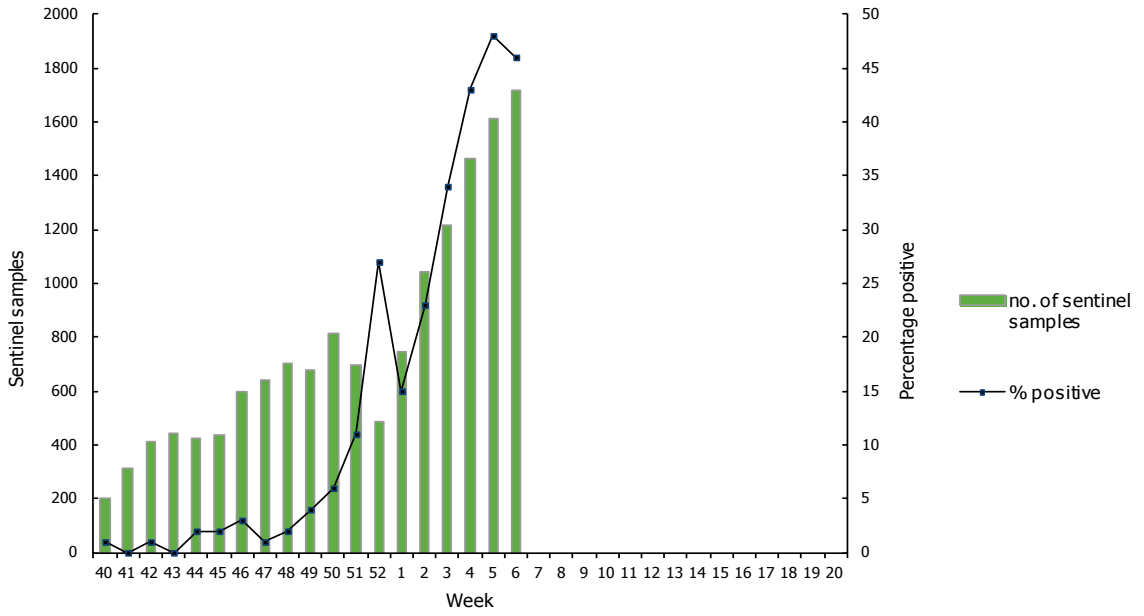


Figure 2: Number of sentinel specimens positive for influenza virus, by type, sub-type and week of report, weeks 40/2011–6/2012

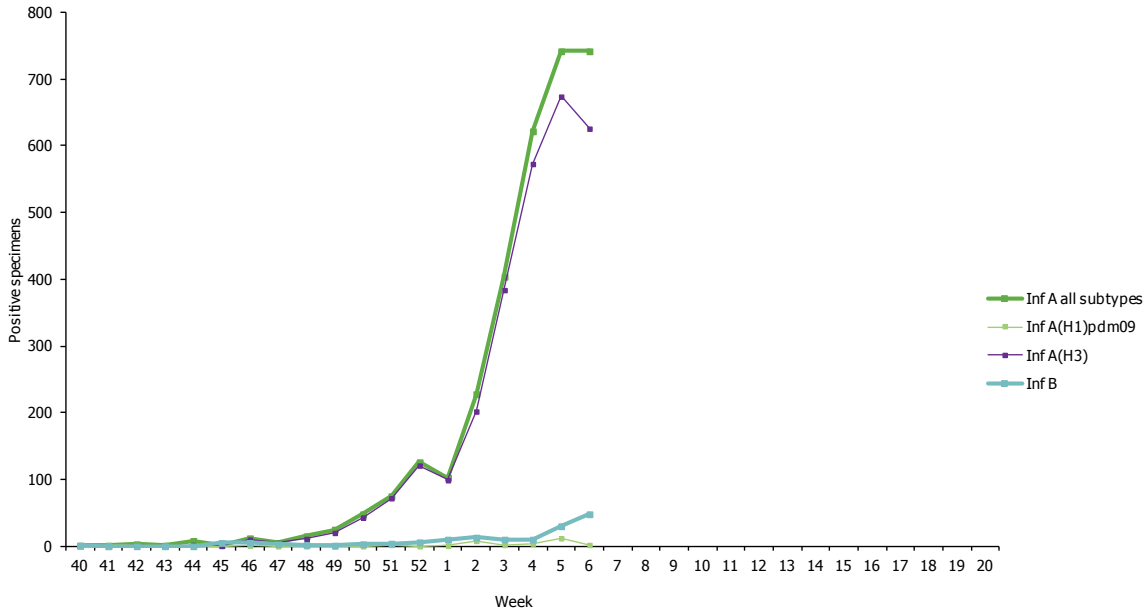


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, sub-type and week of report, weeks 40/2011–6/2012

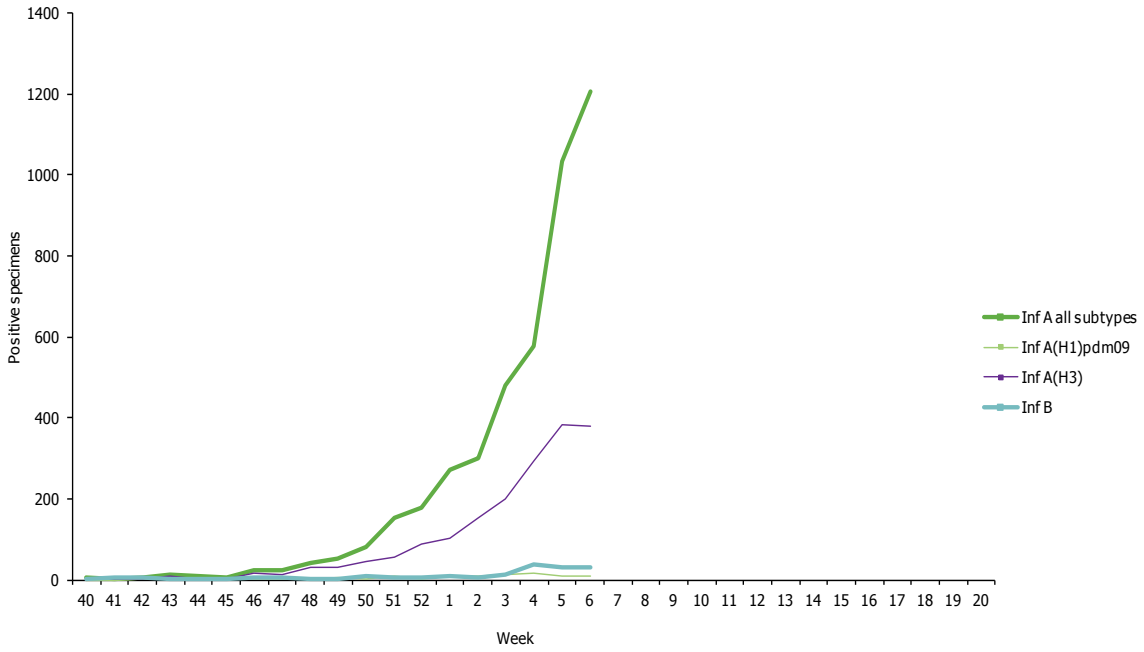


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–6/2012

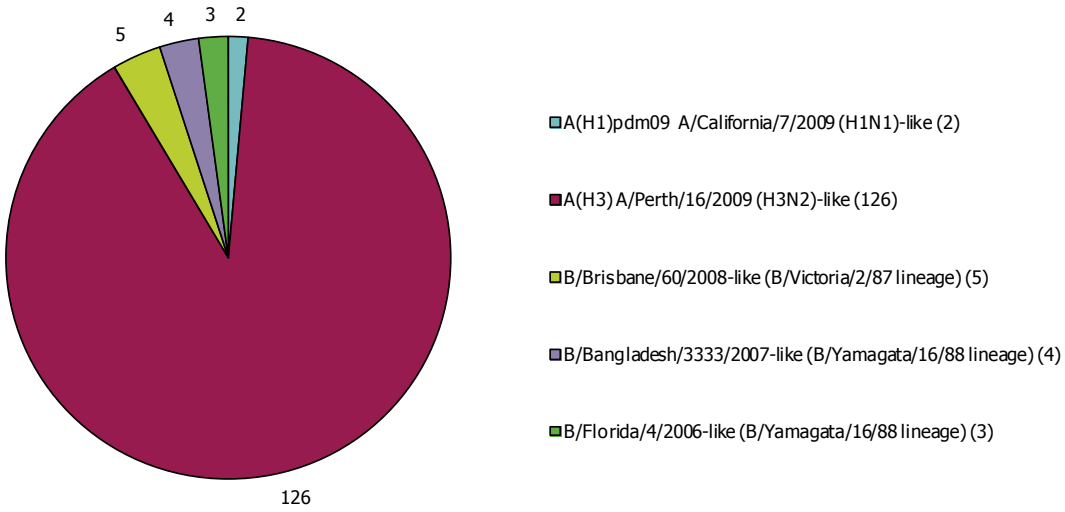


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–6/2012

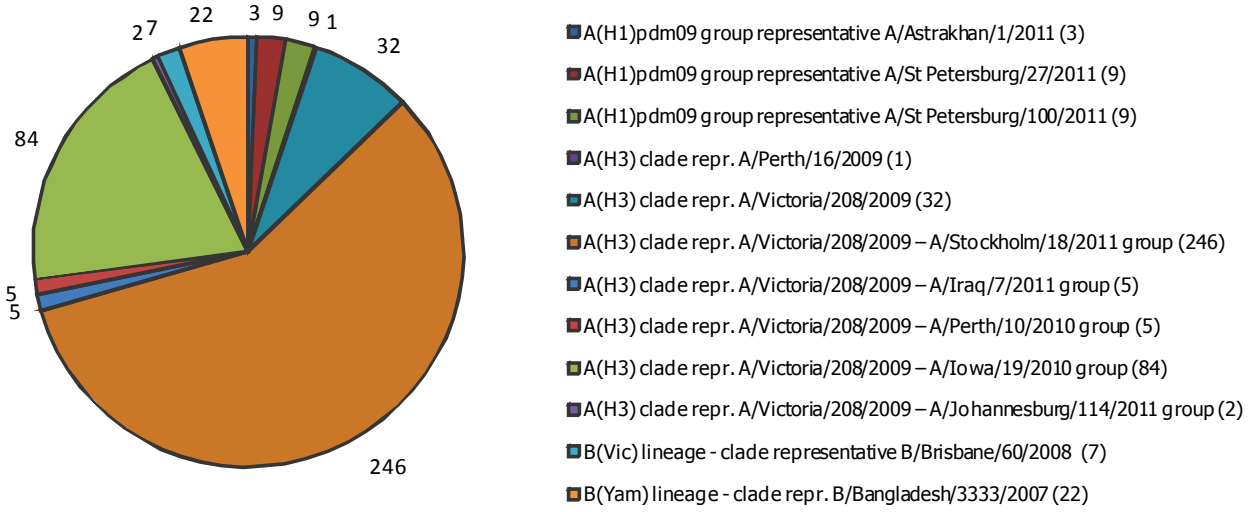
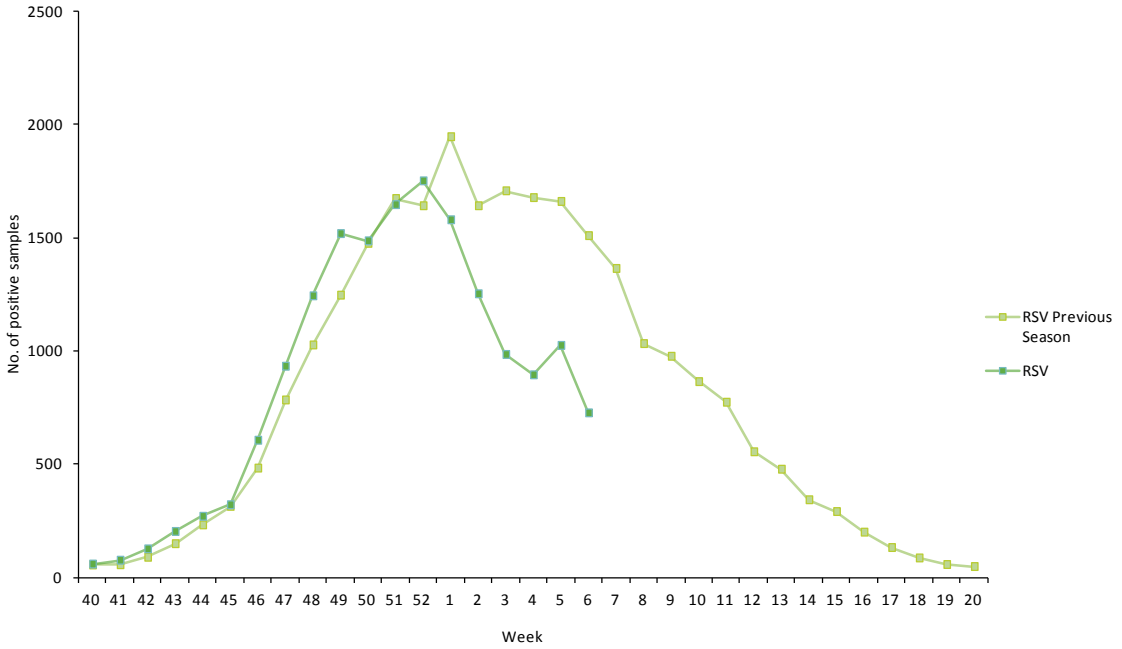


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2011–6/2012

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)	77	0	70	0	79	79 (100%)
A(H1N1)2009	18	0	18	0	7	7 (100%)
B	11	0	10	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 40/2011–6/2012



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 493 SARI cases and 18 fatalities have been reported to TESSy by six countries (Table 4). Of 429 patients for whom information was available, 239 (55.7%) were male (Table 5).

Of 64 SARI cases reported in week 6/2012, 43 were related to influenza virus infection, 31 of which were of the A(H3) subtype (Table 6).

Of the 493 cumulative cases since week 40/2011, 300 (60.9%) were influenza related. Of these 212 had undergone typing and sub-typing, revealing that 180 (84.9%) were associated with A(H3) infection, 20 (9.4%) with A(H1N1)pdm09 and 12 (5.7%) with B viruses (Table 6).

Since week 40/2011, of 171 SARI cases admitted to ICU, at least 36 (21.0%) required ventilation (Table 7).

Of 171 SARI cases for whom the vaccination status was available, 44 (25.7%) were vaccinated against influenza with the seasonal vaccine and five (2.9%) with the monovalent A(H1N1)pdm09 vaccine (Table 8).

Heart and lung conditions represented 27.8% of underlying diseases, although 42.1% of patients had no underlying condition (Figure 8).

Table 4: Cumulative number of SARI cases, weeks 40/2011- 6/2012

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	176		10		
France	28		2		
Slovakia	12	0.22			5440078
United Kingdom	62	0.1			59255492
Romania	212	3.65	4	0.07	5813728
Total	**493**		**18**		

Figure 7: Number of SARI cases by week of onset, weeks 40/2011–6/2012

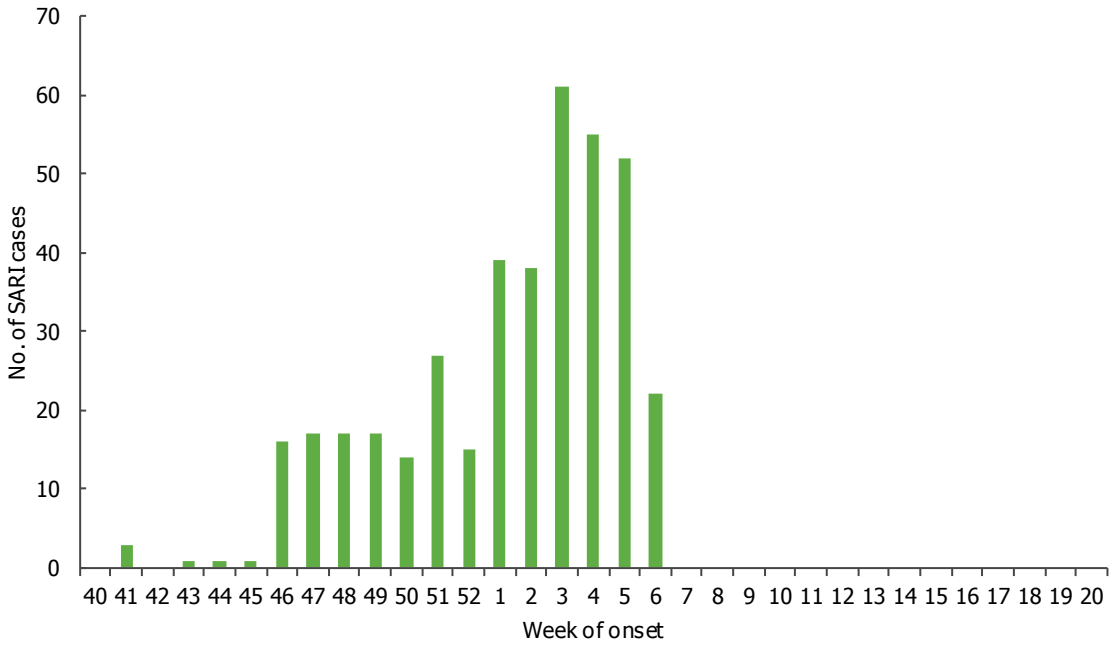


Table 5: Number of SARI cases by age and gender, weeks 40/2011–6/2012

Age groups	Male	Female	Unknown
Under 2	70	42	
2-17	59	46	1
18-44	25	33	
45-59	26	19	
>=60	58	50	1
Unknown	1		62
Total	**239**	**190**	**64**

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

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	43	288
A(H1)pdm09		20
A(H3)	31	180
A(sub-typing not performed)	12	88
Influenza B		12
Other pathogen		2
Unknown	21	191
Total	64	493

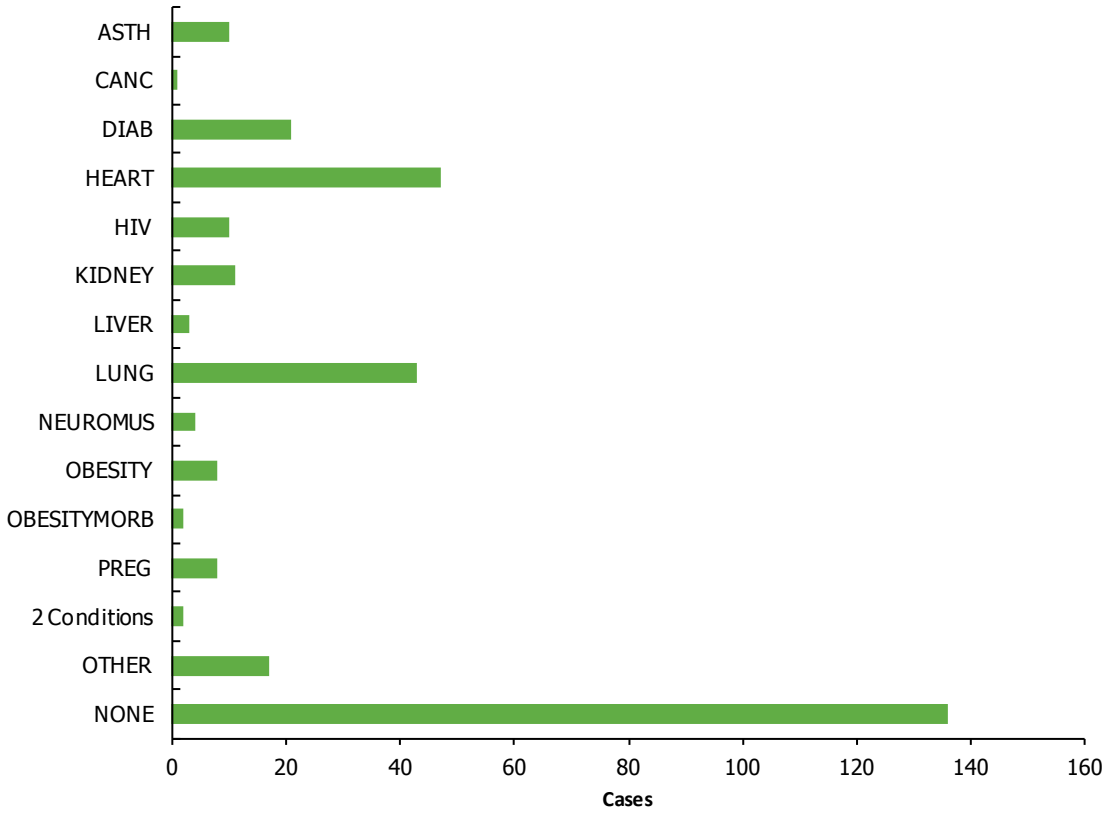
Table 7: Number of SARI cases by level of care and respiratory support, weeks 40/2011–6/2012

Respiratory support	ICU	In-patient ward	Other	Unknown
No respiratory support necessary	8	115		
Oxygen therapy	16	67		
Respiratory support given unknown	111	7	121	12
Ventilator	36			

Table 8: Number of SARI cases by influenza vaccination status, weeks 40/2011–6/2012

Vaccination status	No. of influenza cases	Percentage of cases
Seasonal vaccination	21	7.0
Vaccinated for A(H1N1)pdm09	5	
Fully vaccinated for seasonal & A(H1N1)pdm09	23	7.7
Not vaccinated	122	40.7
Unknown	129	43.0
TOTAL	**300**	

Figure 8: Number of SARI cases by underlying condition, weeks 40/2011–6/2012



Note: Other represents any other underlying condition 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.

Country comments

Romania: In total, 38.7% of all SARI cases had underlying risk conditions, and 44.4% of confirmed SARI cases (AH3). The number of deaths in SARI cases (4) has remained unchanged since week 52, none of them being caused by influenza. Laboratory investigations have been performed for 87.7% of SARI cases. The first two influenza viruses (AH3) were detected in SARI cases notified in week 52. To date, the total positivity rate for SARI cases has been 66% and the positivity rate for influenza in SARI cases is 19.4%. The most frequently detected aetiologies were influenza AH3 (36 cases), RSV (26), PIV (22) and *Str. pneumoniae* (14). In eight out of 36 confirmed (AH3) SARI cases, AH3N2 has been isolated. One of them was also tested for antiviral resistance, with negative results, both for oseltamivir and zanamivir. Following the declaration on 8 February 2012 that week 5 had been the week of onset for the influenza season in Romania ("week with 10% positive samples for the same sub-type/variant out of the total number of tested samples in that week"), we passed to the sampling protocol specific to the new period of ILI and SARI surveillance. Therefore, SARI samples received in the National Reference Laboratory as of 10 February 2012 will only be tested for influenza.

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.