

SURVEILLANCE REPORT

Weekly influenza surveillance overview

30 March 2012

Main surveillance developments in week 12/2012 (19 – 25 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 2011/12 influenza season started late and has been without any clear geographic progression. The following points are noteworthy this week:

- Decreasing trends were reported by 21 countries, fourteen of which have reported such trends for at least two consecutive weeks while only Lithuania, Poland and Slovakia reported increasing trends.
- Of 940 sentinel specimens tested, 42.9% were positive for influenza virus. This proportion was unchanged compared to week 11 after declining steadily from a peak of 58% in week 8. Of the positive sentinel specimens, 75.2% were type A and 24.8% type B. The proportion of influenza B viruses has continued to increase.
- There has been a degree of heterogeneity in the antigenicity of the A(H3) viruses this season and an imperfect fit with the A(H3) component in the seasonal vaccine.
- Since week 40/2011, a total of 1 513 SARI cases, including 79 fatalities, have been reported by seven countries. Of these cases, most were influenza-related.
- No resistance to neuraminidase inhibitors (oseltamivir and zanamivir) has been reported so far this season.

The decrease in the proportion of influenza-positive sentinel specimens and the growing number of countries reporting continuously decreasing trends in ILI/ARI notifications indicate that the epidemic has passed its peak in most European countries. As often observed late in the season, the proportion of type B virus influenza detections has been increasing over the past six weeks.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Medium or low intensity was indicated by all 28 reporting countries. For more information, [click here](#).

Virological surveillance: Of 403 sentinel specimens testing positive for influenza virus, 303 (75.2%) were type A and 100 (24.8%) type B. For more information, [click here](#).

Hospital surveillance of severe acute respiratory infection (SARI):

Since week 40/2011, seven countries have reported 1 513 SARI cases, most of which were related to influenza infection. For more information, [click here](#).

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

During week 12/2012, 28 countries reported clinical data. For the first time since week 7/2012, no country reported high intensity whereas 13 reported low intensity and 15 reported medium intensity (Table 1, Map 1). Thirteen countries have reported medium or higher intensity for at least three consecutive weeks.

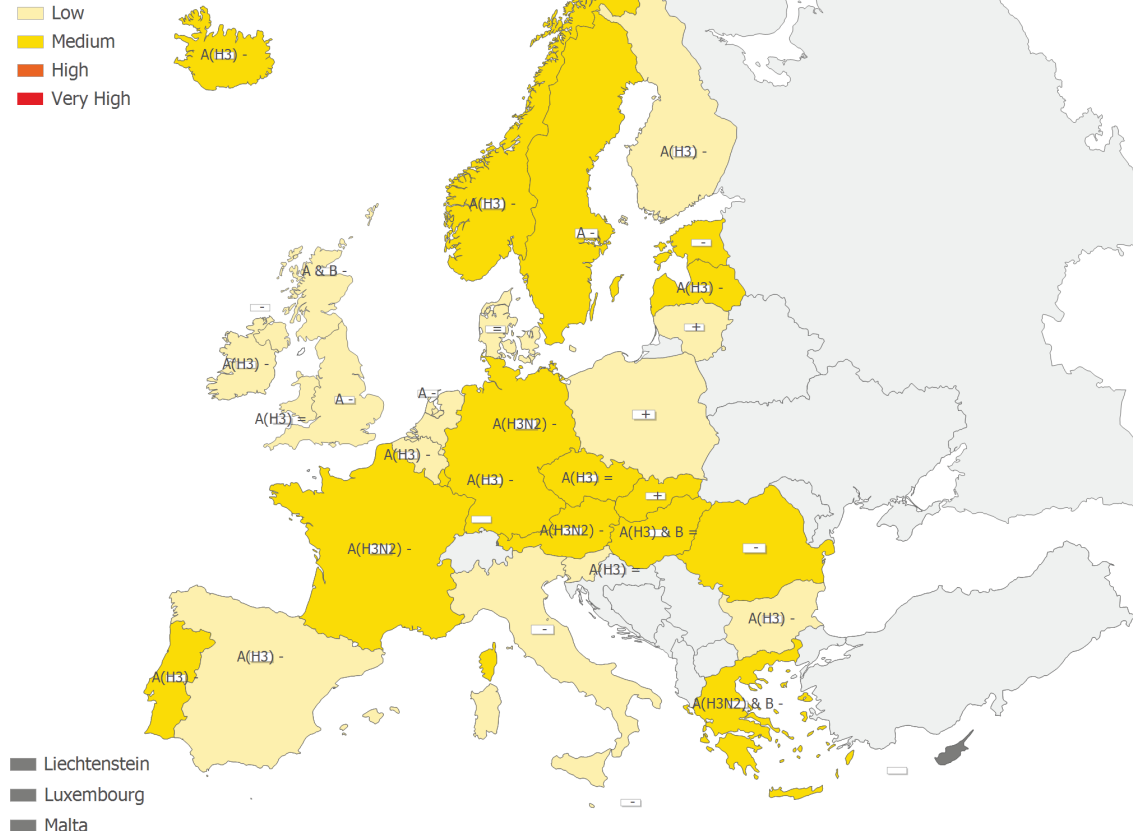
Geographic spread was reported as widespread by 11 countries (Austria, Belgium, Estonia, France, Greece, Hungary, Latvia, Norway, Portugal, Slovenia, and Sweden), regional by four, local by nine, and sporadic by three. Poland reported no activity (Table 1, Map 2).

Decreasing trends were reported by 21 countries (Table 1, Map 2) of which 14 countries (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Malta, the Netherlands, Norway, Portugal, Spain, and Sweden) have reported decreasing trends for at least two consecutive weeks, suggesting that their influenza seasons have peaked. Increasing trends in clinical activity were reported by three countries (Lithuania, Poland and Slovakia) and stable trends by four (the Czech Republic, Denmark, Hungary and Slovenia) (Table 1, Map 2).

Map 1: Intensity for week 12/2012

Intensity

- No report
- Low
- Medium
- High
- Very High

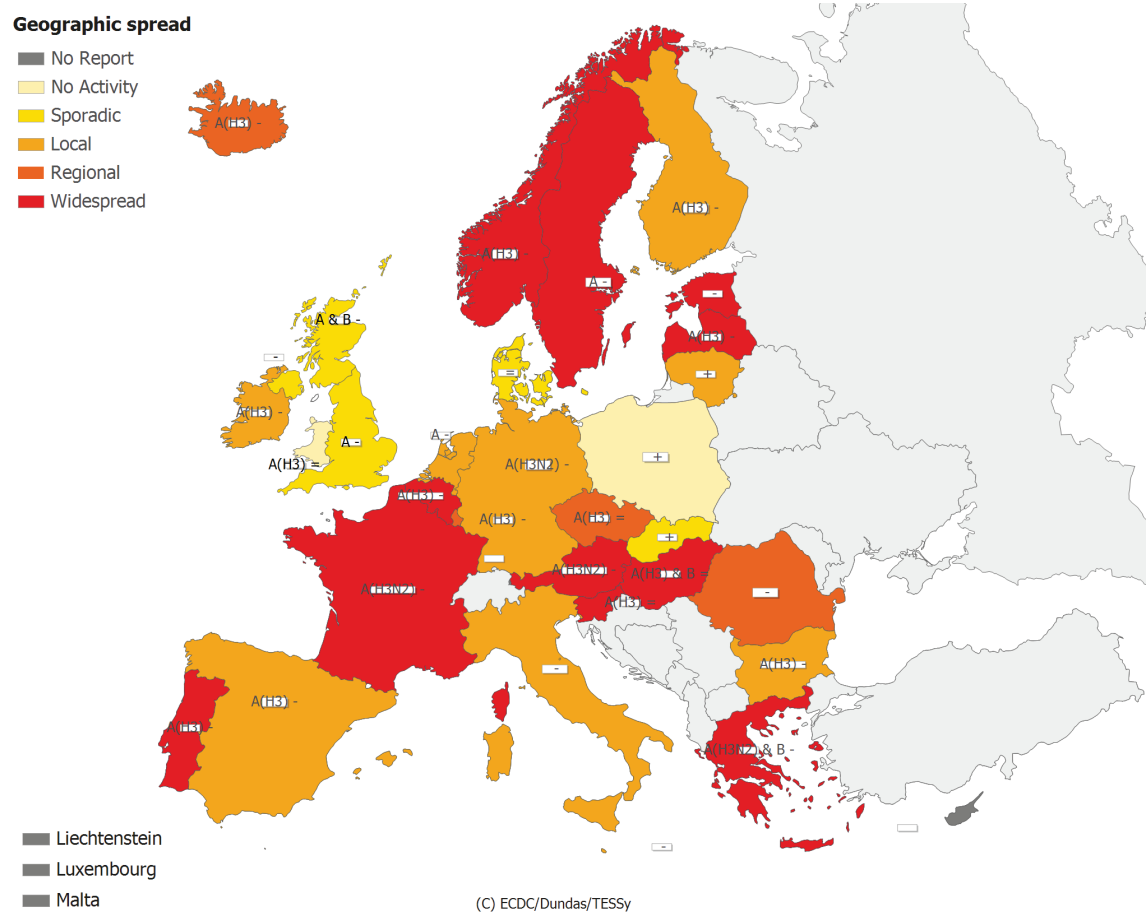


* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

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 & B	Type A and B
		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 12/2012



(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	+	Increasing clinical activity
No activity	No evidence of influenza virus activity (clinical activity remains at baseline levels)	-	Decreasing clinical activity
Sporadic	Isolated cases of laboratory confirmed influenza infection	=	Stable clinical activity
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)	A	Type A
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)	A & B	Type A and B
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)	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 12/2012

Country	Intensity	Geographic spread	Trend	No. of sentinel specimens	Dominant type	Percentage positive	ILI per 100 000	ARI per 100 000	Epidemiological overview	Virological overview
Austria	Medium	Widespread	Decreasing	21	A(H3N2)	57.1	24.5	-	Graphs	Graphs
Belgium	Low	Widespread	Decreasing	33	A(H3)	60.6	130.8	1651.0	Graphs	Graphs
Bulgaria	Low	Local	Decreasing	21	A(H3)	47.6	-	816.9	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic	Medium	Regional	Stable	30	A(H3)	63.3	81.9	1080.8	Graphs	Graphs
Denmark	Low	Sporadic	Stable	3	None	100.0	51.5	-	Graphs	Graphs
Estonia	Medium	Widespread	Decreasing	17	-	47.1	14.3	361.1	Graphs	Graphs
Finland	Low	Local	Decreasing	38	A(H3)	10.5	-	-	Graphs	Graphs
France	Medium	Widespread	Decreasing	142	A(H3N2)	38.0	-	1551.8	Graphs	Graphs
Germany	Medium	Local	Decreasing	91	A(H3N2)	49.5	-	1262.9	Graphs	Graphs
Greece	Medium	Widespread	Decreasing	29	A(H3N2) & B	65.5	264.9	-	Graphs	Graphs
Hungary	Medium	Widespread	Stable	98	A(H3) & B	58.2	237.0	-	Graphs	Graphs
Iceland	Medium	Regional	Decreasing	-	A(H3)	0.0	37.1	-	Graphs	Graphs
Ireland	Low	Local	Decreasing	15	A(H3)	33.3	12.1	-	Graphs	Graphs
Italy	Low	Local	Decreasing	15	-	26.7	141.9	-	Graphs	Graphs
Latvia	Medium	Widespread	Decreasing	11	A(H3)	54.5	193.2	1038.5	Graphs	Graphs
Lithuania	Low	Local	Increasing	8	-	50.0	12.3	567.7	Graphs	Graphs
Luxembourg	Medium	Regional	Decreasing	34	A(H3)	47.1	.*	.*	Graphs	Graphs
Malta	Low	Local	Decreasing	-	-	0.0	.*	.*	Graphs	Graphs
Netherlands	Low	Local	Decreasing	13	A	69.2	33.2	-	Graphs	Graphs
Norway	Medium	Widespread	Decreasing	2	A(H3)	0.0	106.9	-	Graphs	Graphs
Poland	Low	No activity	Increasing	24	None	12.5	131.2	-	Graphs	Graphs
Portugal	Medium	Widespread	Decreasing	10	A(H3)	10.0	74.2	-	Graphs	Graphs
Romania	Medium	Regional	Decreasing	16	None	43.8	4.0	834.6	Graphs	Graphs
Slovakia	Medium	Sporadic	Increasing	9	None	66.7	243.2	1748.6	Graphs	Graphs
Slovenia	Low	Widespread	Stable	20	A(H3)	85.0	26.0	1272.4	Graphs	Graphs
Spain	Low	Local	Decreasing	104	A(H3)	32.7	34.1	-	Graphs	Graphs
Sweden	Medium	Widespread	Decreasing	46	A	13.0	11.9	-	Graphs	Graphs
UK - England	Low	Sporadic	Decreasing	71	A	39.4	9.4	426.6	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Decreasing	0	-	0.0	24.7	399.9	Graphs	Graphs
UK - Scotland	Low	Sporadic	Decreasing	15	A & B	20.0	12.3	513.4	Graphs	Graphs
UK - Wales	Low	No activity	Stable	4	A(H3)	75.0	5.2	-	Graphs	Graphs
Europe				940		42.9			Graphs	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 12/2012, 27 countries reported virological data. Of 940 sentinel specimens tested, 403 (42.9%) were positive for influenza virus (Table 1, Figure 1), of which 303 (75.2%) were type A and 100 (24.8%) type B (Table 2). This proportion was unchanged compared to week 11 after declining steadily from a peak of 58% in week 8 (Figure 1). The proportion of influenza B viruses reported has continued to increase over the past three weeks (8.6% in week 9/2012).

Of the 1 921 influenza viruses detected from sentinel and non-sentinel sources during week 12/2012, 1 720 (89.5%) were type A and 201 (10.5%) were type B. Of the 554 influenza A viruses subtyped, 528 (95.3%) were A(H3) and 26 (4.7%) were A(H1)pdm09 (Table 2).

Of the 27 631 influenza virus detections in sentinel and non-sentinel specimens since week 40/2011, 26 195 (94.8%) were type A and 1 436 (5.2%) were type B viruses. Of 12 589 influenza A viruses subtyped, 12 266 (97.4%) were A(H3) viruses and 323 (2.6%) were A(H1)pdm09 (Table 2, Figures 2 and 3). The lineage of 191 influenza B viruses has been determined: 109 (57.1%) were B-Victoria and 82 (42.9%) were B-Yamagata lineage (Table 2).

Since week 40/2011, 929 antigenic characterisations of viruses have been reported, of which 795 (85.6%) were A/Perth/16/2009 (H3N2)-like (Figure 4).

Since week 40/2011, 906 genetic characterisations of viruses have been reported, 787 (86.9%) of which were A(H3) viruses. Of the latter, 511 (64.9%) fell 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 the current vaccine virus A/Perth/16/2009. This is consistent with the WHO recommendation to change the vaccine virus 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 12/2012, 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.

In week 12/2012, 14 countries reported 465 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 40/2011–12/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	303	1417	7638	18557
A(H1)pdm09	6	20	81	242
A(H3)	230	298	6776	5490
A(sub-typing not performed)	67	1099	781	12825
Influenza B	100	101	708	728
B(Vic) lineage	15	4	70	39
B(Yam) lineage	5	1	43	39
Unknown lineage	80	96	595	650
Total influenza	403	1518	8346	19285

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 40/2011–12/2012

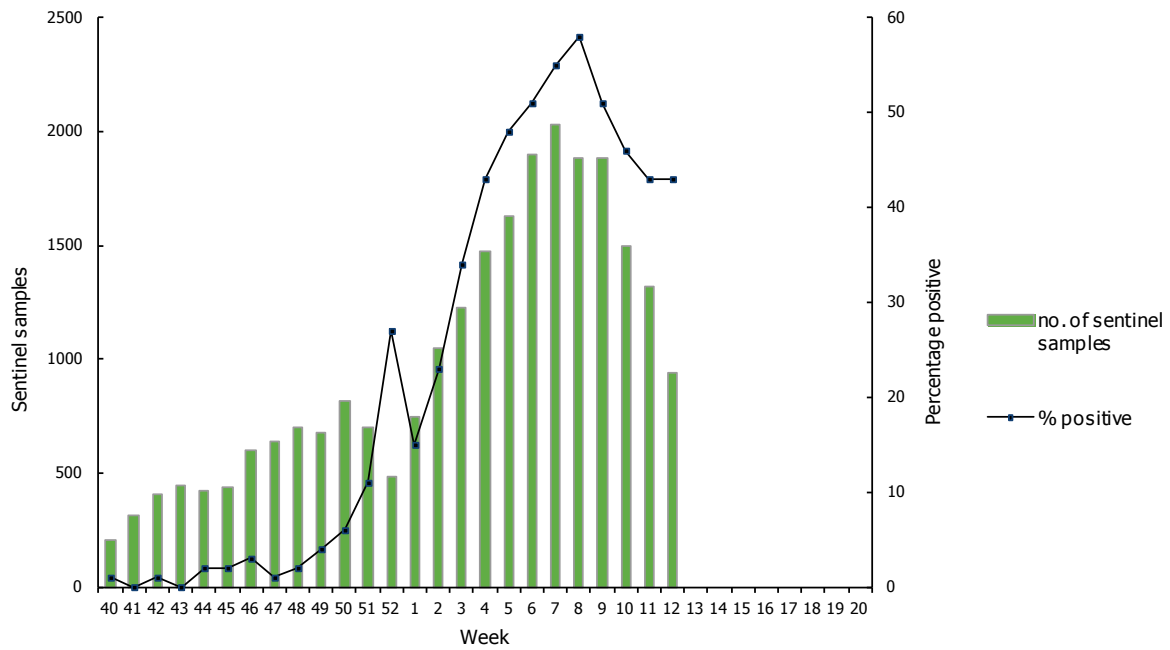


Figure 2: Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40/2011–12/2012

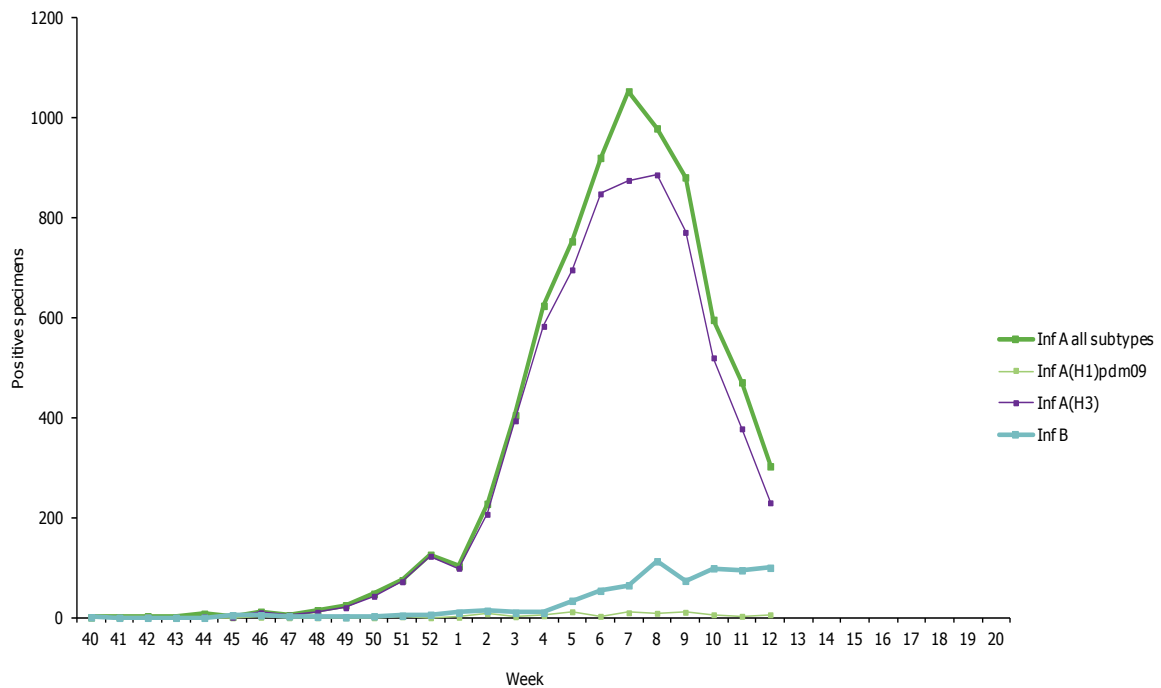


Figure 3: Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2011–12/2012

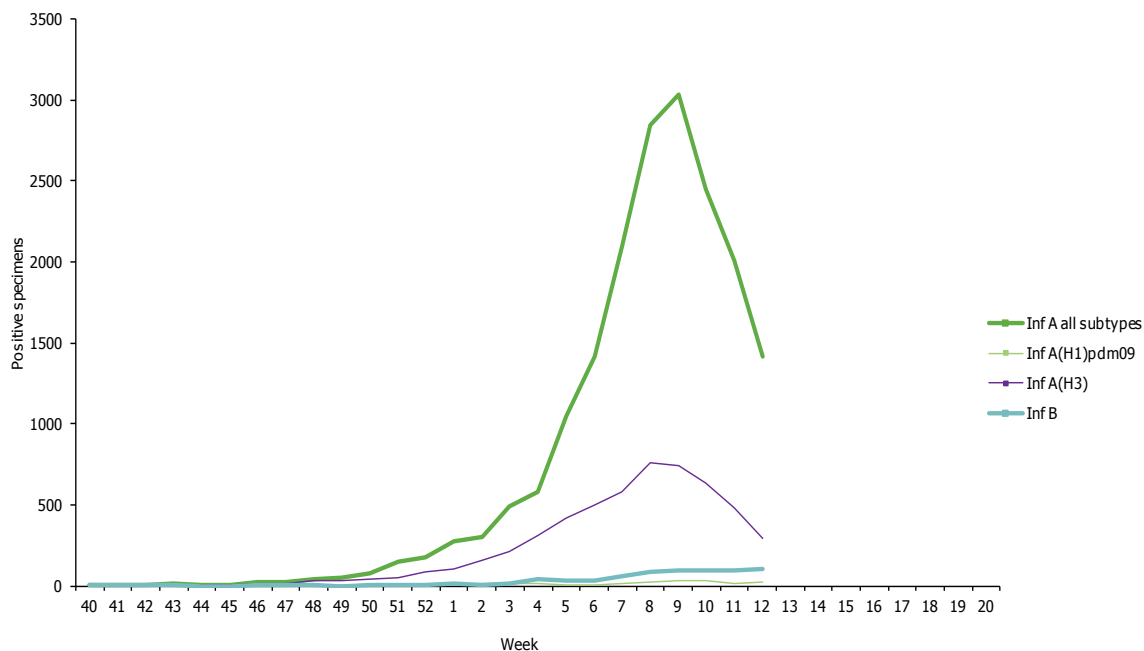


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–12/2012

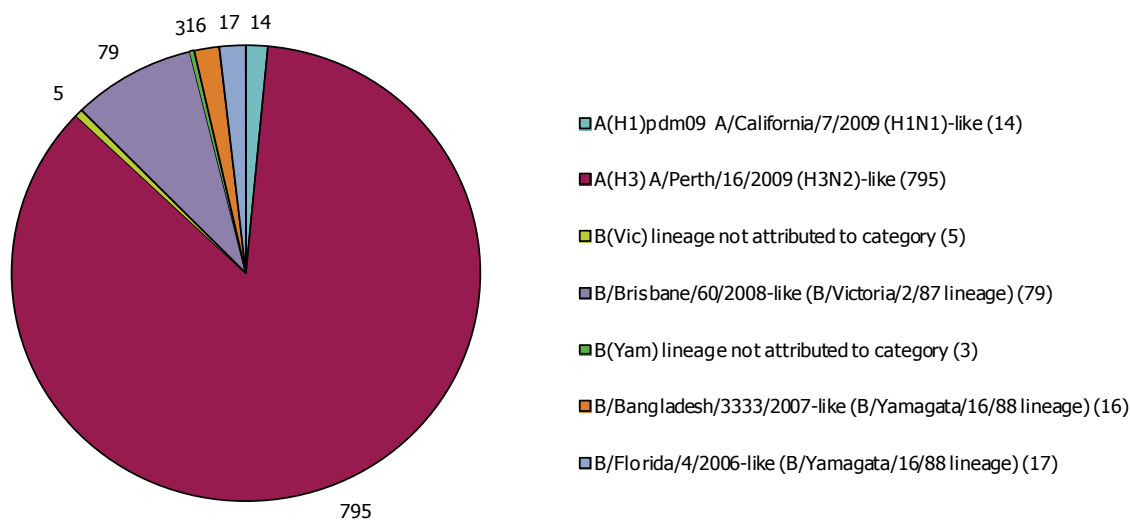


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–12/2012

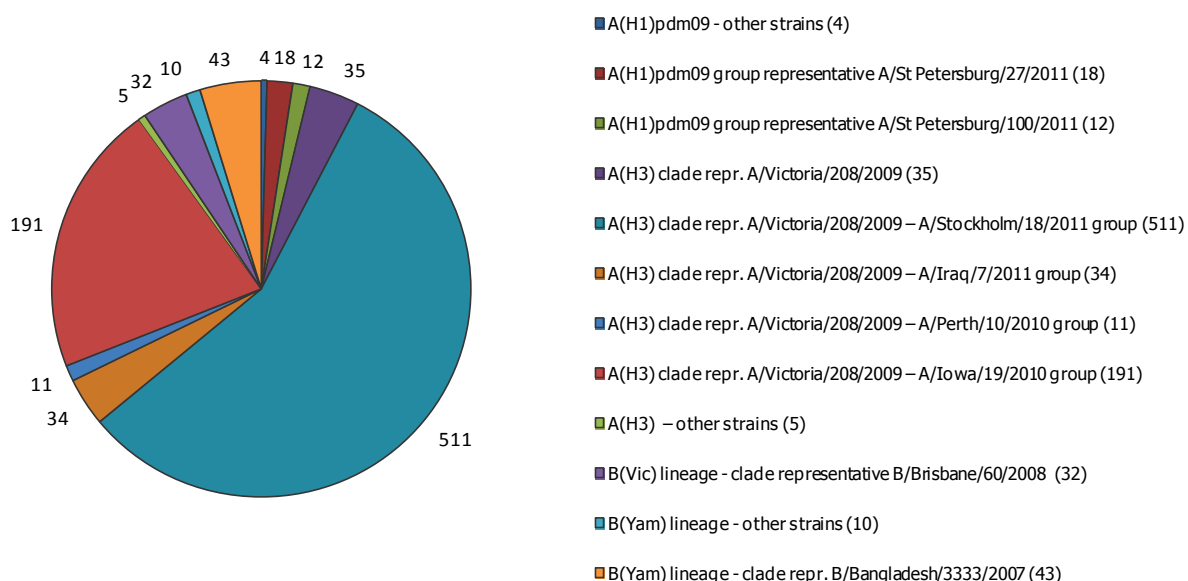
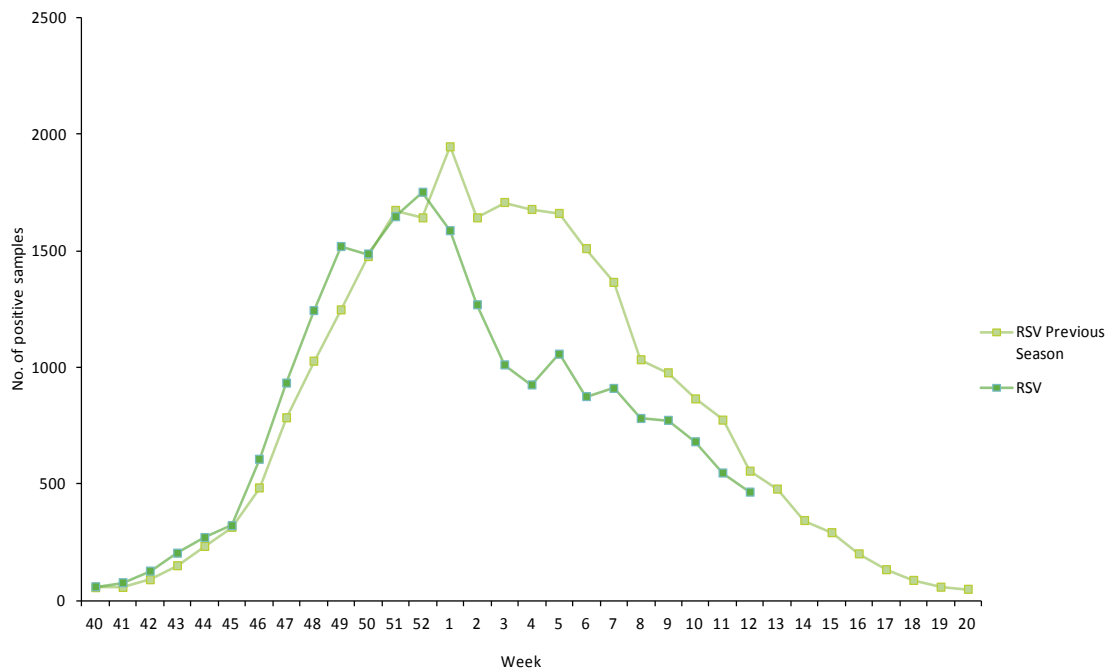


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2011–12/2012

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)	279	0	271	0	98	98 (100%)
A(H1N1)2009	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 40/2011–12/2012



Country comments

UK (Scotland): Influenza A includes H3 subtype and Influenza A subtype unknown.

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 1 513 SARI cases, including 79 fatalities, have been reported by seven countries (Table 4 and Figure 7). Of 1 309 patients for whom information was available, 711 (54.3%) were male (Table 5).

Of 12 SARI cases reported in week 12/2012, 10 were related to influenza virus infection: seven A-not subtyped, two subtype A(H3) and one type B (Table 6).

Of the 1 513 cumulative cases since week 40/2011, 1 120 (74.0%) were influenza-related. Of these, 1 084 were confirmed as type A virus infections. Of 695 influenza A viruses subtyped, 654 (94.1%) were A(H3) and 41 (5.9%) were A(H1)pdm09 infections. Thirty-six (3.2%) influenza-related SARI cases were infected with influenza B virus (Table 6).

Since week 40/2011, of 695 SARI cases admitted to ICU, at least 243 (34.9%) required ventilation (Table 7). Of 635 SARI cases with confirmed influenza virus infection for which the vaccination status was available, 203 (31.9%) were vaccinated against seasonal influenza (Table 8).

Table 4: Cumulative number of SARI cases, weeks 40/2011–12/2012

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
Romania	280	4.82	5	0.09	5813728
Slovakia	26	0.48			5440078
Ireland	7		3		
Spain	560		34		
Belgium	177		5		
France	269		32		
United Kingdom	194	0.33			59255492
Total	1513		79		

Figure 7: Number of SARI cases by week of onset, weeks 40/2011–12/2012

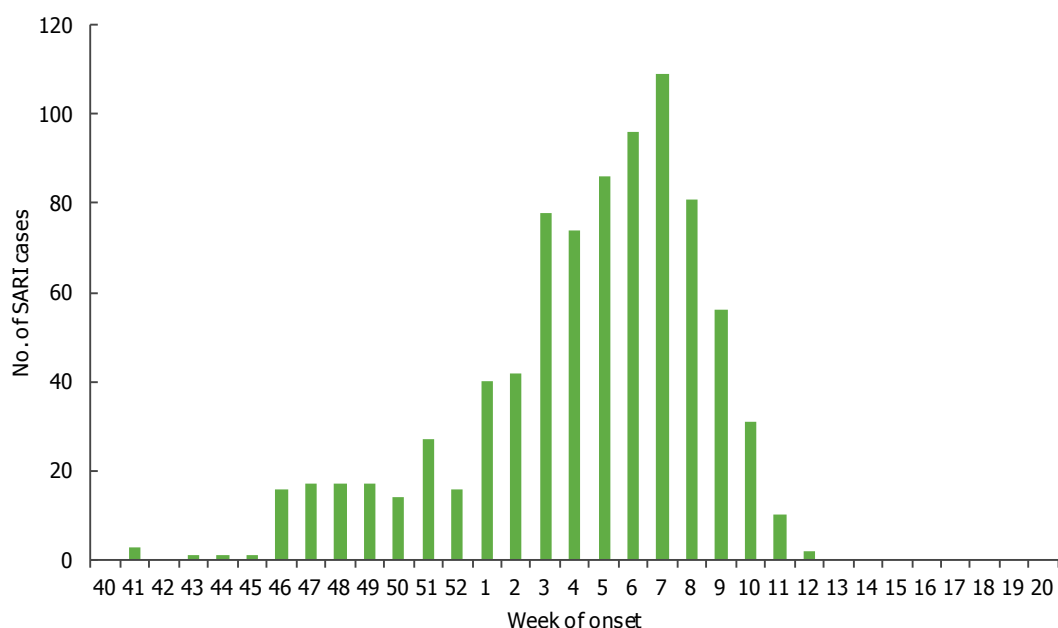


Table 5: Number of SARI cases by age and gender, weeks 40/2011–12/2012

Age groups	Male	Female	Unknown
Under 2	138	98	1
2-17	132	96	
18-44	62	68	3
45-59	88	79	2
>=60	285	256	3
Unknown	6	1	195
Total	711	598	204

Table 6: Number of SARI cases by influenza type and subtype and other pathogens, week 12/2012 and cumulative for the season

Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	9	1084
A(H1)pdm09		41
A(H3)	2	654
A(sub-typing not performed)	7	389
Influenza B	1	36
Other pathogen		6
Unknown	2	387
Total	12	1513

Table 7: Number of SARI cases by level of care and respiratory support, weeks 40/2011–12/2012

Respiratory support	ICU	In-patient ward	Other	Unknown
No respiratory support necessary	54	124		146
Oxygen therapy	20	74		22
Respiratory support given unknown	378	9	311	76
Ventilator	243			9

Table 8: Number of SARI cases by influenza vaccination status, weeks 40/2011–12/2012

Vaccination status	No. of influenza cases	Percentage of cases
Seasonal vaccination	148	13.2
Vaccinated for A(H1N1)pdm09	9	0.8
Fully vaccinated for seasonal & A(H1N1)pdm09	55	4.9
Not vaccinated	423	37.8
Unknown	485	43.3
TOTAL	1120	

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.

Maps and commentary published in this Weekly Influenza Surveillance Overview (WISO) do not represent a statement on the part of ECDC or its partners on the legal or border status of the countries and territories shown.

All data published in the WISO are up-to-date on the day of publication. Past this date, however, published data should not be used for longitudinal comparisons as countries tend to retrospectively update their database.

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