

SURVEILLANCE REPORT



Weekly influenza surveillance overview

3 February 2012

Main surveillance developments in week 4/2012 (23–29 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 04/2012, while increased geographic spread was reported by 23 of 27 countries and increasing trends by 12 countries, the epidemic threshold was exceeded significantly in only four countries (Bulgaria, Iceland, Italy and Spain) and was just above threshold in Romania and Sweden.
- Of 469 sentinel specimens testing positive for influenza, 95.7% were type A and 4.3% were type B. Of 650 influenza A viruses subtyped, including some from non sentinel sources, 96.6% were A(H3) and 3.4% were A(H1)pdm09. In the limited number of specimens that were tested for antiviral resistance, no antiviral resistance to the neuraminidase inhibitors (oseltamivir and zanamivir) was found.
- During week 04/2012, 38 SARI cases were reported to TESSy by six countries and 12 of these were influenza-related. Cumulatively this season, there have been 333 SARI cases. Where typing and subtyping had been performed, 16% were associated with A(H1)pdm09, 75% with A(H3) and 9% with type B.
- Influenza activity was widespread in four countries and present or increasing in the rest of Europe. The subtype A(H3N2) is dominating the season to date but A(H1) and B viruses are also present.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): While increased influenza activity was reported by 23 of 27 countries reporting, the epidemic threshold was exceeded significantly in four countries (Bulgaria, Iceland, Italy and Spain) and moderately in Romania and Sweden. For more information, [click here](#).

Virological surveillance: Of 1 303 sentinel specimens tested for influenza, 36.0% were positive, indicating an increasing influenza activity across Europe. For more information, [click here](#).

Hospital surveillance of severe acute respiratory infection (SARI): In week 4/2012, 38 SARI cases were reported to TESSy by six countries and 12 of these were related to influenza infection. For more information, [click here](#).

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

During week 4/2012, 27 countries reported clinical data. In Bulgaria, Iceland, Italy and Spain where medium activity was reported, the ILI rates were significantly above the epidemic threshold and high percentages of specimens tested positive for influenza – ranging from 37.2% to 68.8% (Table 1, Map 1). In addition, the epidemic thresholds were just exceeded in Romania and Sweden.

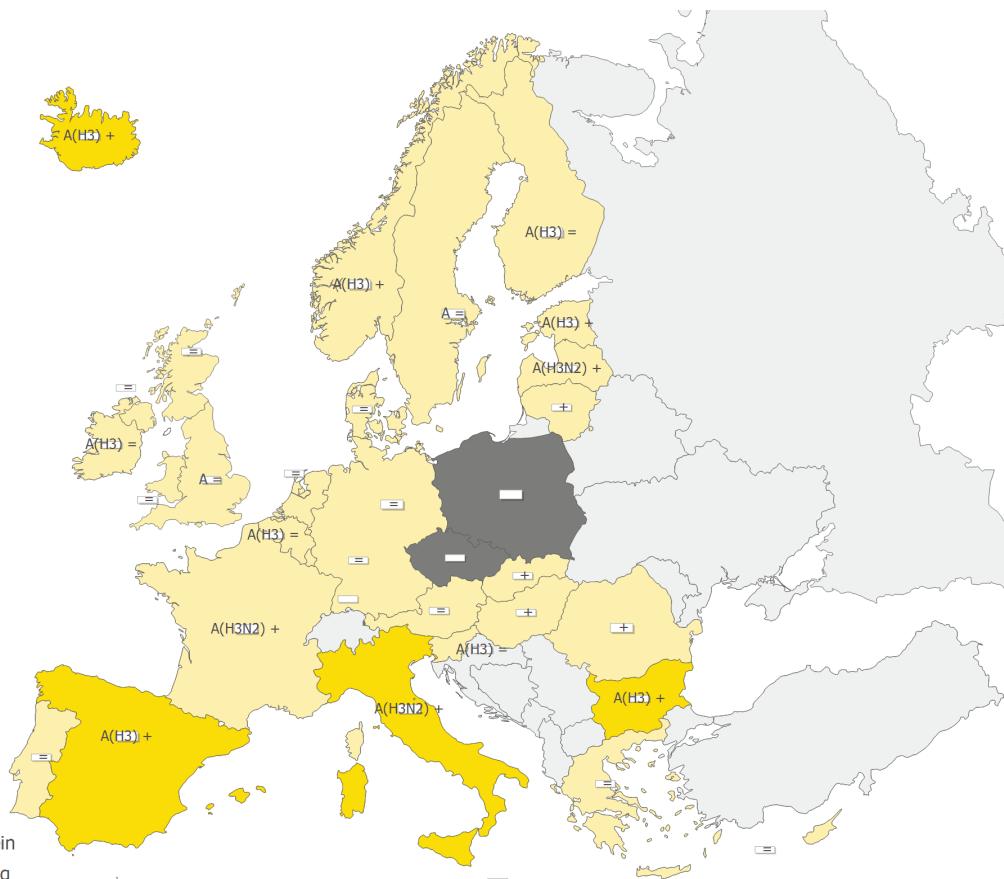
In addition to these six countries, 17 reported at least sporadic activity while four countries reported no activity (Cyprus, Denmark, Slovakia and the UK (Wales)) and 12 countries reported increasing trends.

Map 1: Intensity for week 4/2012**Intensity**

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



- Liechtenstein
- Luxembourg
- Malta



(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 4/2012

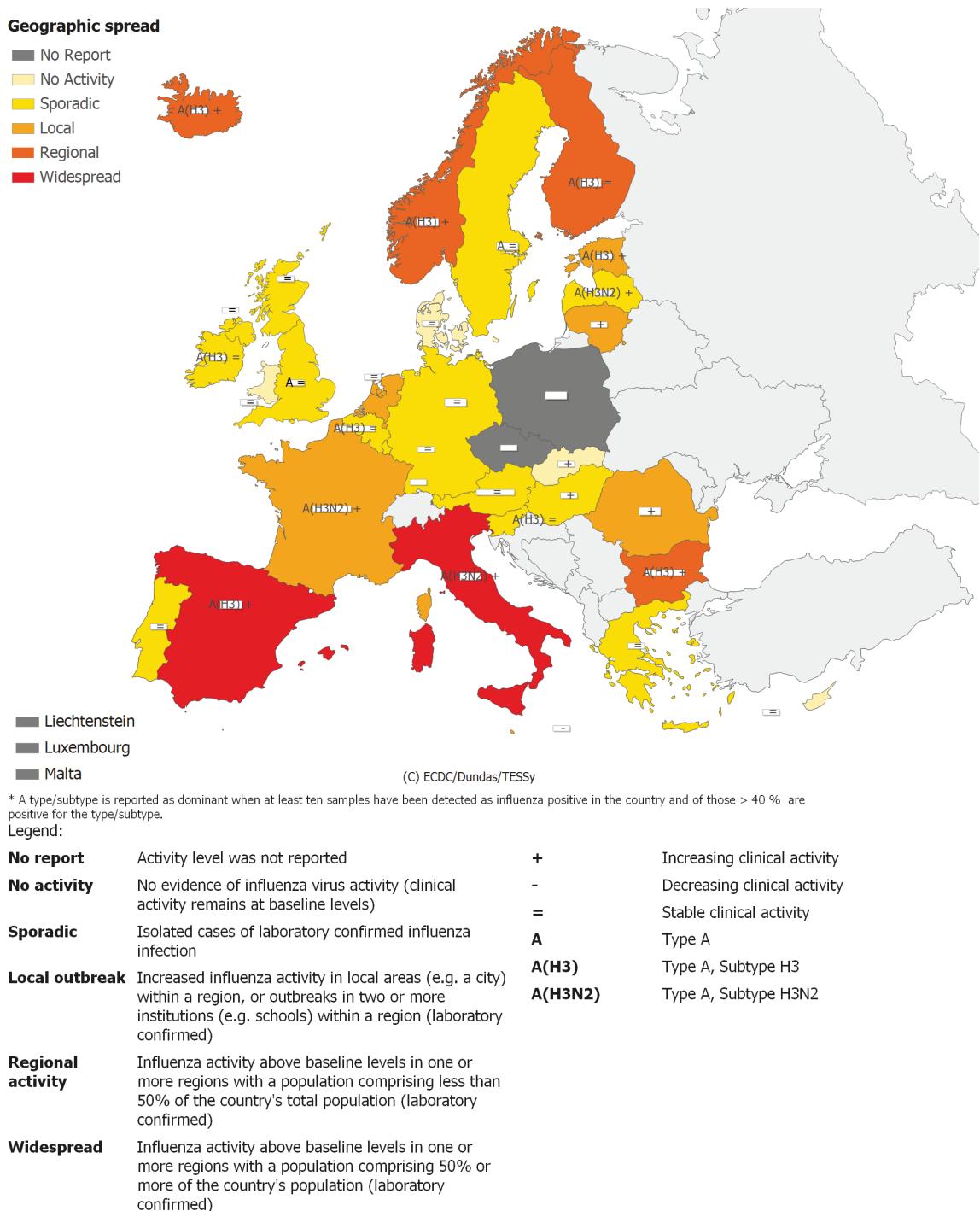


Table 1: Epidemiological and virological overview by country, week 4/2012

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	Sporadic	Stable	14	None	35.7	18.3	-	Graphs	Graphs
Belgium	Low	Sporadic	Stable	13	A(H3)	38.5	119.9	2087.3	Graphs	Graphs
Bulgaria	Medium	Regional	Increasing	43	A(H3)	37.2	-	1756.5	Graphs	Graphs
Cyprus	Low	No activity	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic				-	-	0.0	-	-		
Denmark	Low	No activity	Stable	2	None	0.0	47.9	-	Graphs	Graphs
Estonia	Low	Local	Increasing	19	A(H3)	10.5	9.6	267.4	Graphs	Graphs
Finland	Low	Regional	Stable	62	A(H3)	24.2	-	-	Graphs	Graphs
France	Low	Local	Increasing	151	A(H3N2)	26.5	-	1968.6	Graphs	Graphs
Germany	Low	Sporadic	Stable	65	None	9.2	-	1113.4	Graphs	Graphs
Greece	Low	Sporadic	Stable	7	None	57.1	103.4	-	Graphs	Graphs
Hungary	Low	Sporadic	Increasing	43	None	11.6	101.4	-	Graphs	Graphs
Iceland	Medium	Regional	Increasing	0	A(H3)	0.0	33.0	-	Graphs	Graphs
Ireland	Low	Sporadic	Stable	14	A(H3)	7.1	12.2	-	Graphs	Graphs
Italy	Medium	Widespread	Increasing	173	A(H3N2)	68.8	866.4	-	Graphs	Graphs
Latvia	Low	Sporadic	Increasing	0	A(H3N2)	0.0	12.3	1246.8	Graphs	Graphs
Lithuania	Low	Local	Increasing	1	None	0.0	2.3	519.2	Graphs	Graphs
Luxembourg	Low	Sporadic	Stable	12	None	8.3	-*	-*	Graphs	Graphs
Malta	Medium	Local	Decreasing	-	-	0.0	-*	-*	Graphs	Graphs
Netherlands	Low	Local	Stable	12	None	8.3	38.2	-	Graphs	Graphs
Norway	Low	Regional	Increasing	8	A(H3)	62.5	70.5	-	Graphs	Graphs
Poland				10	None	0.0	126.8	-	Graphs	Graphs
Portugal	Low	Sporadic	Stable	3	None	0.0	23.1	-	Graphs	Graphs
Romania	Low	Local	Increasing	31	None	25.8	6.2	655.8	Graphs	Graphs
Slovakia	Low	No activity	Increasing	3	None	0.0	152.2	1477.1	Graphs	Graphs
Slovenia	Low	Sporadic	Stable	31	A(H3)	41.9	9.3	1305.0	Graphs	Graphs
Spain	Medium	Widespread	Increasing	443	A(H3)	47.6	196.1	-	Graphs	Graphs
Sweden	Low	Sporadic	Stable	29	A	0.0	8.0	-	Graphs	Graphs
UK - England	Low	Sporadic	Stable	76	A	15.8	7.8	389.2	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Stable	3	-	0.0	16.9	396.9	Graphs	Graphs
UK - Scotland	Low	Sporadic	Stable	35	None	0.0	10.0	472.8	Graphs	Graphs
UK - Wales	Low	No activity	Stable	-	-	0.0	5.4	-	Graphs	Graphs
Europe				1303		36.0			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 4/2012, 26 countries and the UK (England, Northern Ireland and Scotland) reported virological data. Of 1 303 sentinel specimens tested, 469 (36%) from 16 countries and the UK (England) were positive for influenza virus (Table 1, Figure 1). The percentage of positive specimens has increased continuously from 1.1% in week 47 to 36% in week 4/2012. In addition, 554 non-sentinel source specimens, e.g. specimens collected for diagnostic purposes in hospitals, were found to be positive for influenza virus.

Of the 1 023 influenza viruses detected from sentinel and non-sentinel sources during week 4/2012, 979 (95.7%) were type A and 44 (4.3%) were type B. Of the 650 influenza A viruses subtyped, 628 (96.6%) were A(H3) and 22 (3.4%) were A(H1)pdm09 (Table 2).

Of the 3 762 influenza virus detections in sentinel and non-sentinel specimens since week 40/2011, 3 576 (95.1%) were type A and 186 (4.9%) were type B viruses. Of 2 293 influenza A viruses subtyped, 2 192 (95.6%) were A(H3) viruses and 101 (4.4%) were A(H1)pdm09 (Table 2, Figures 2 & 3). The lineage of 20 influenza B viruses has been determined: 10 (50%) were B-Yamagata and 10 (50%) were B-Victoria lineage (Table 2).

Since week 40/2011, 75 antigenic characterisations of viruses have been reported: 66 as A/Perth/16/2009 (H3N2)-like; two as A/California/7/2009 (H1N1)-like; three as B/Brisbane/60/2008-like (Victoria lineage); two as B/Florida/4/2006-like (Yamagata lineage); and two as B/Bangladesh/3333/2007-like (Yamagata lineage) (Figure 4).

Since week 40/2011, 156 genetic characterisations of viruses have been reported, of which the majority (66.0%) 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.

Since week 40/2011, antiviral susceptibility data for viruses in Europe have been reported to the TESSy and EUROFLU antiviral databases. Up to week 4/2012, test results for 98 viruses from Germany, the Netherlands, Norway, Portugal and Sweden have been reported. 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 tested 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 (http://www.who.int/influenza/human_animal_interface/avian_influenza/h5n1-2011_12_19/en/index.html).

In week 4/2012, 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 40/2011–04/2012

Virus type/subtype	Current period Sentinel	Current period Non-sentinel	Season Sentinel	Season Non-sentinel
Influenza A	461	518	1438	2138
A(H1)pdm09	4	18	19	82
A(H3)	402	226	1284	908
A(sub-typing not performed)	55	274	135	1148
Influenza B	8	36	69	117
B(Vic) lineage	0	0	1	9
B(Yam) lineage	0	0	7	3
Unknown lineage	8	36	61	105
Total Influenza	469	554	1507	2255

Note: A(H1)pdm09 and A(H3) include both N-subtyped and non-N-subtyped viruses

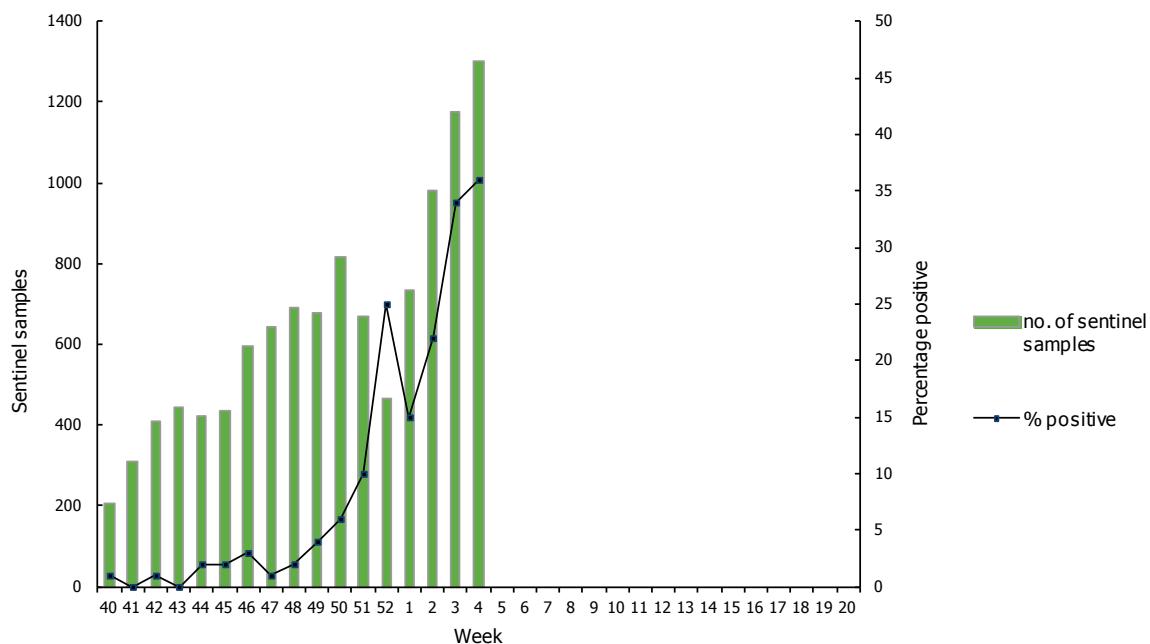
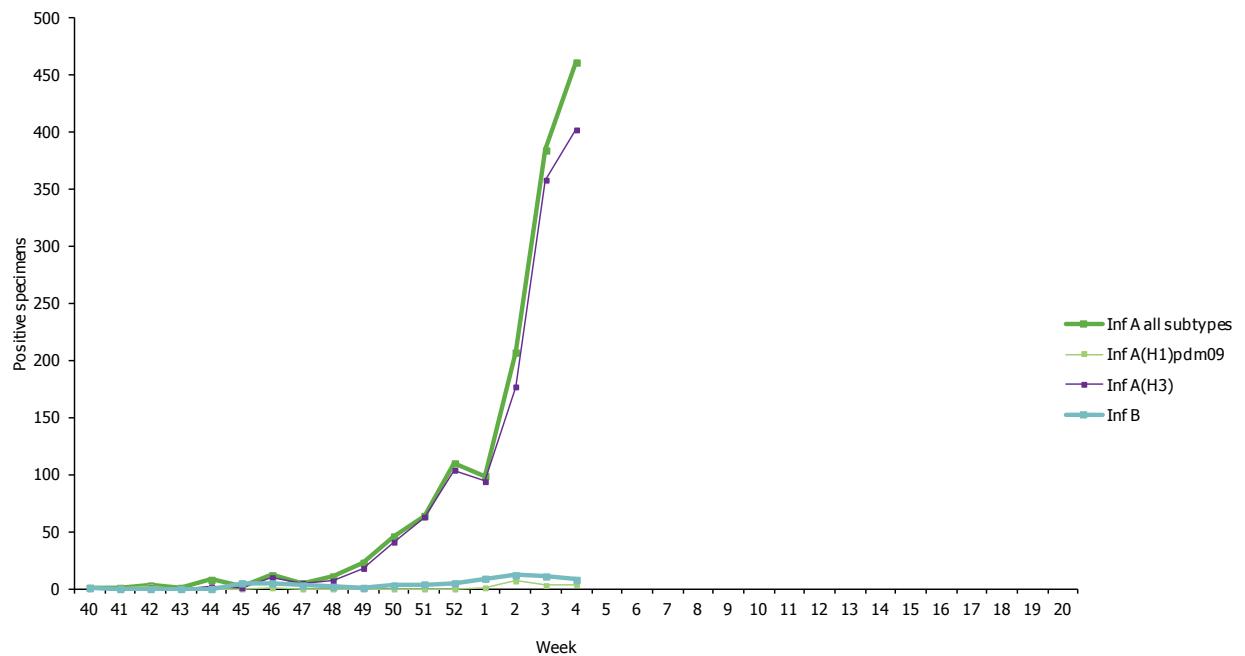
Figure 1: Proportion of sentinel specimens positive for influenza virus, weeks 40/2011–4/2012**Figure 2: Number of sentinel specimens positive for influenza virus, by type, sub-type and week of report, weeks 40/2011–4/2012**

Figure 3: Number of non-sentinel specimens positive for influenza virus by type, sub-type and week of report, weeks 40/2011–4/2012

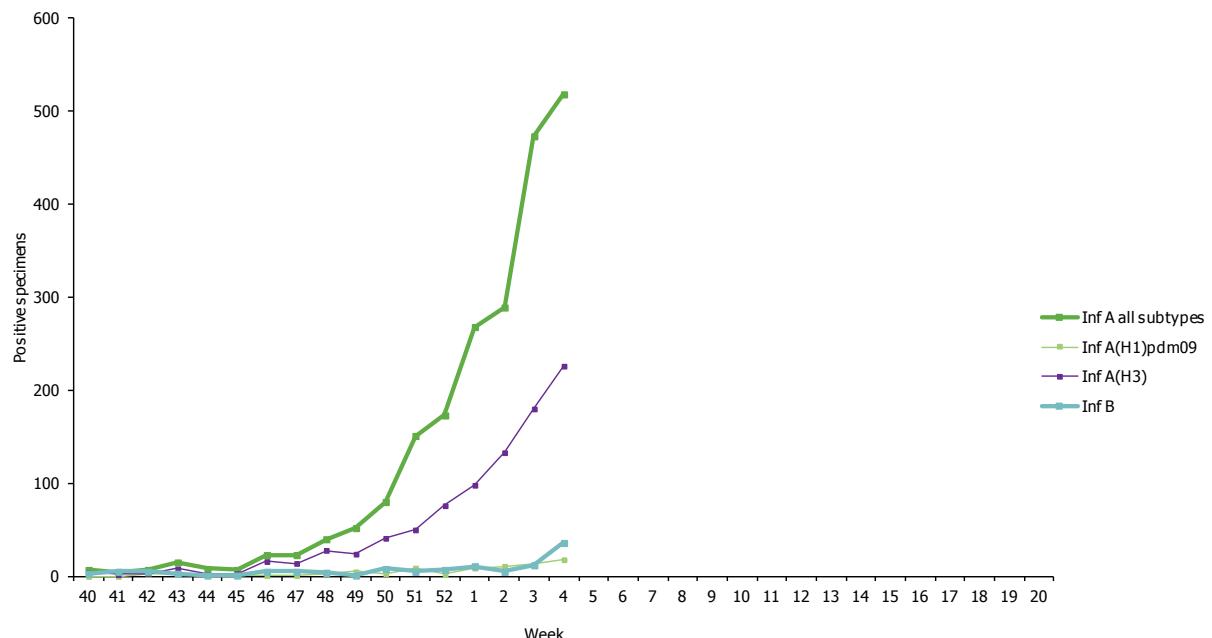


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–4/2012

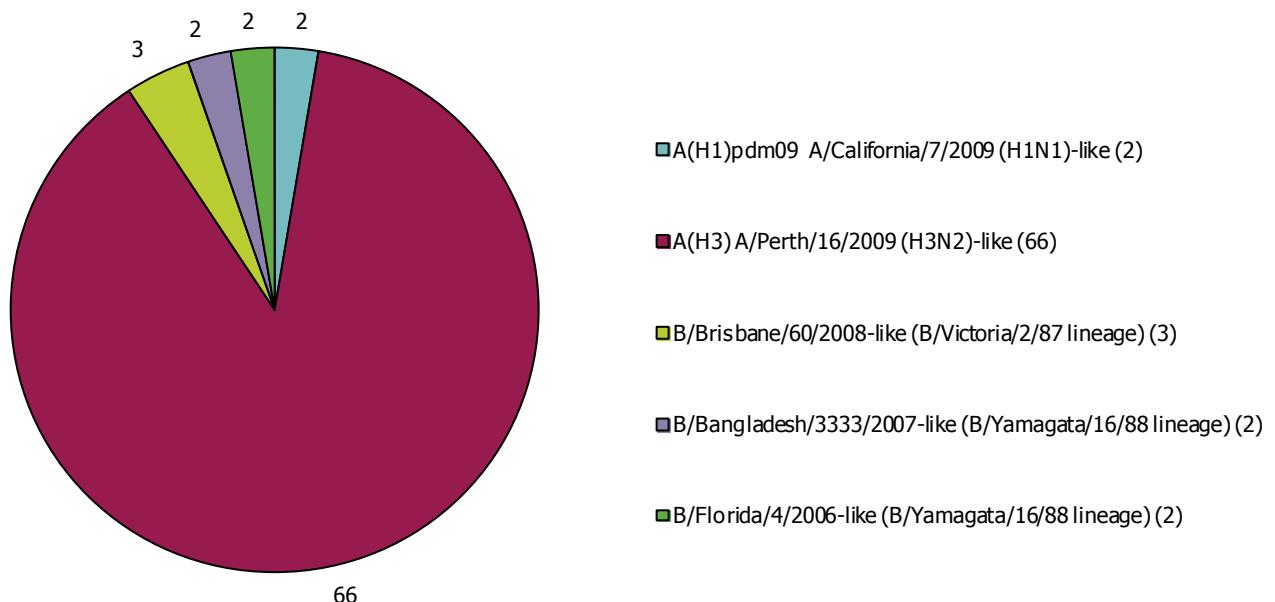
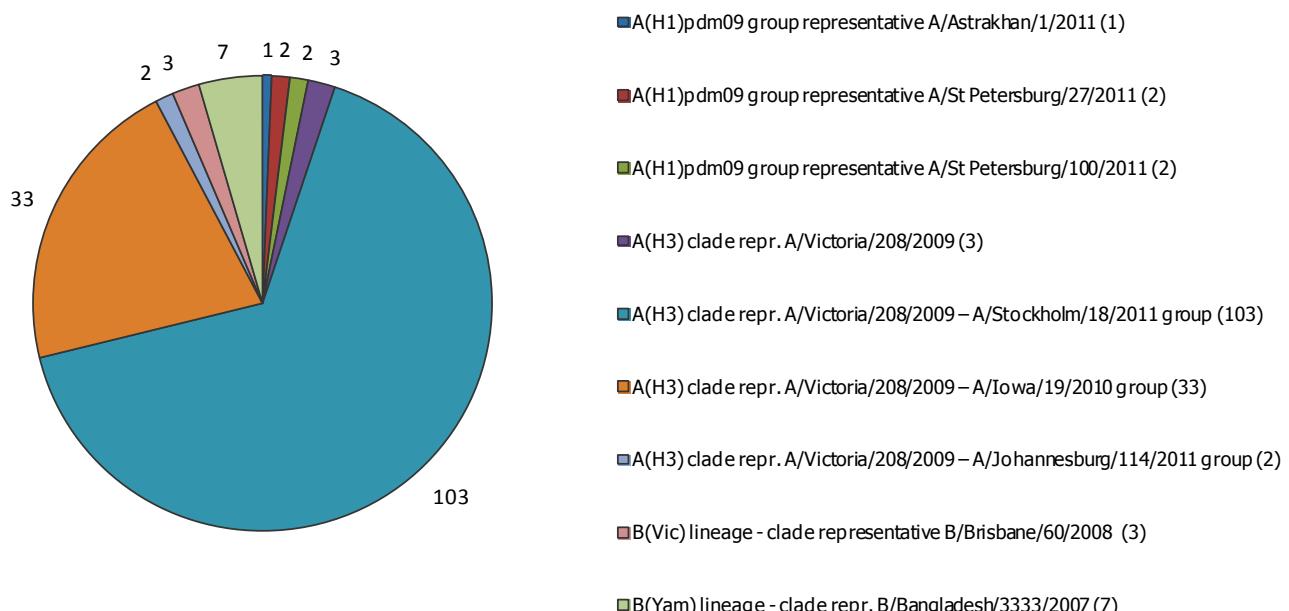
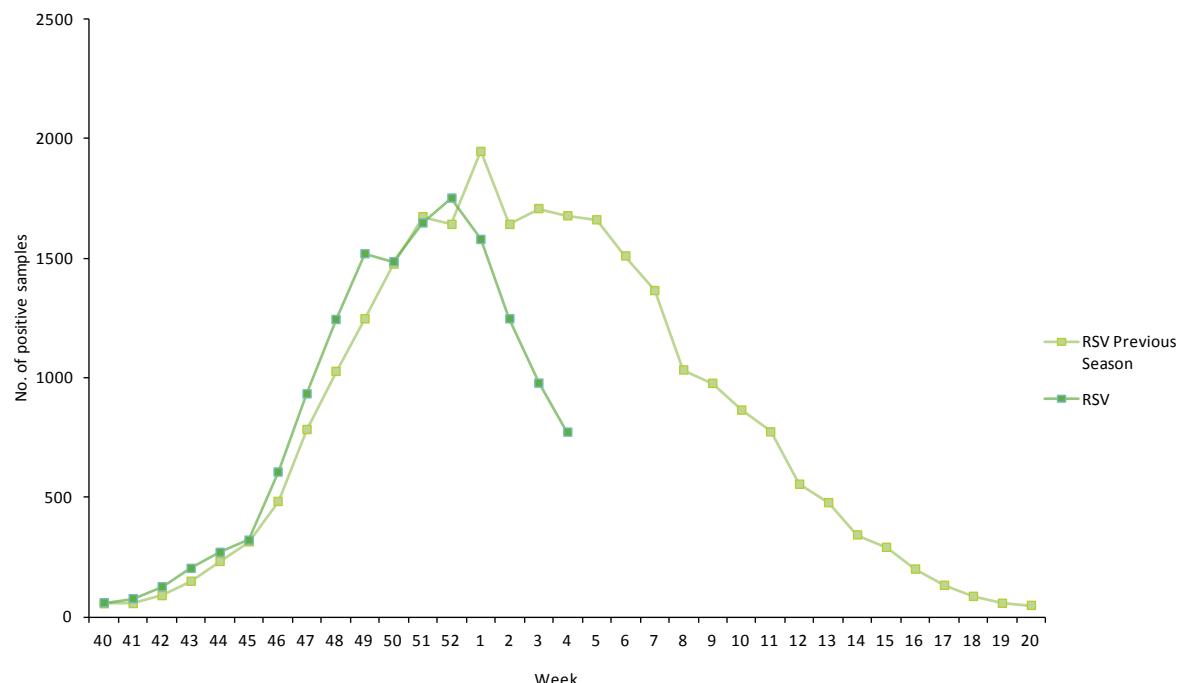


Figure 5: Results of genetic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2011–4/2012**Table 3: Antiviral resistance by influenza virus type and sub-type, weeks 40/2011–4/2012**

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)	29	0	29	0	75	75 (100%)
A(H1N1)pdm09	9	0	9	0	5	5(100%)
B	5	0	5	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 40/2011–4/2012



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 4/2012, 38 SARI cases were reported to TESSy by six countries and 12 of these cases were related to influenza infection. The cumulative numbers since week 40/2011 are 333 cases and 12 related-fatalities (Table 4). Of 269 patients for whom the information was available, 154 (57.2%) were male (Table 5).

Of the 333 SARI cases reported since week 40/2011, 173 were confirmed to be related to influenza virus infection (Table 6).

Of 333 SARI cases, 125 were admitted to ICU (Table 6)

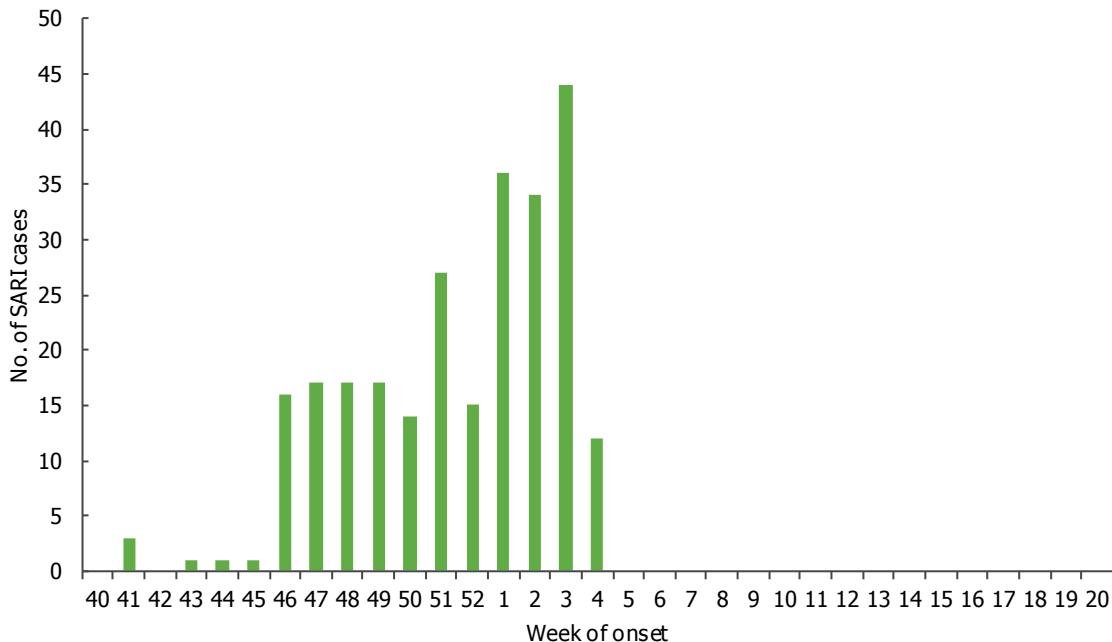
Of 82 influenza confirmed SARI cases for whom vaccination status was available, 25 (30%) were vaccinated against influenza (Table 8).

Heart and lung conditions were the main important underlying diseases, although 45% of patients had no underlying condition (Figure 8)

Country comment: In Spain, all severe cases of influenza reported since week 40/2012 are related to influenza infection. There have been 81 cases, 96% of them due to influenza A (98% of AH3 among subtyped specimens). Among these 81 cases, there have been five deaths, two related to influenza AH3 and three to influenza A (not subtyped).

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

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	81		5		
France	12		1		
Slovakia	9	0.17			5440078
United Kingdom	62	0.1			59255492
Romania	166	2.86	4	0.07	5813728
Total	333		12		

Figure 7: Number of SARI cases by week of onset, weeks 40/2011–4/2012**Table 5: Number of SARI cases by age and gender, weeks 40/2011–4/2012**

Age groups	Male	Female	Unknown
Under 2	51	25	
2-17	39	36	1
18-44	19	20	
45-59	15	9	
>=60	30	25	1
Unknown			62
Total	154	115	64

Table 6: Number of SARI cases by influenza type and sub-type and other pathogens, week 4/2012 and cumulative for the season

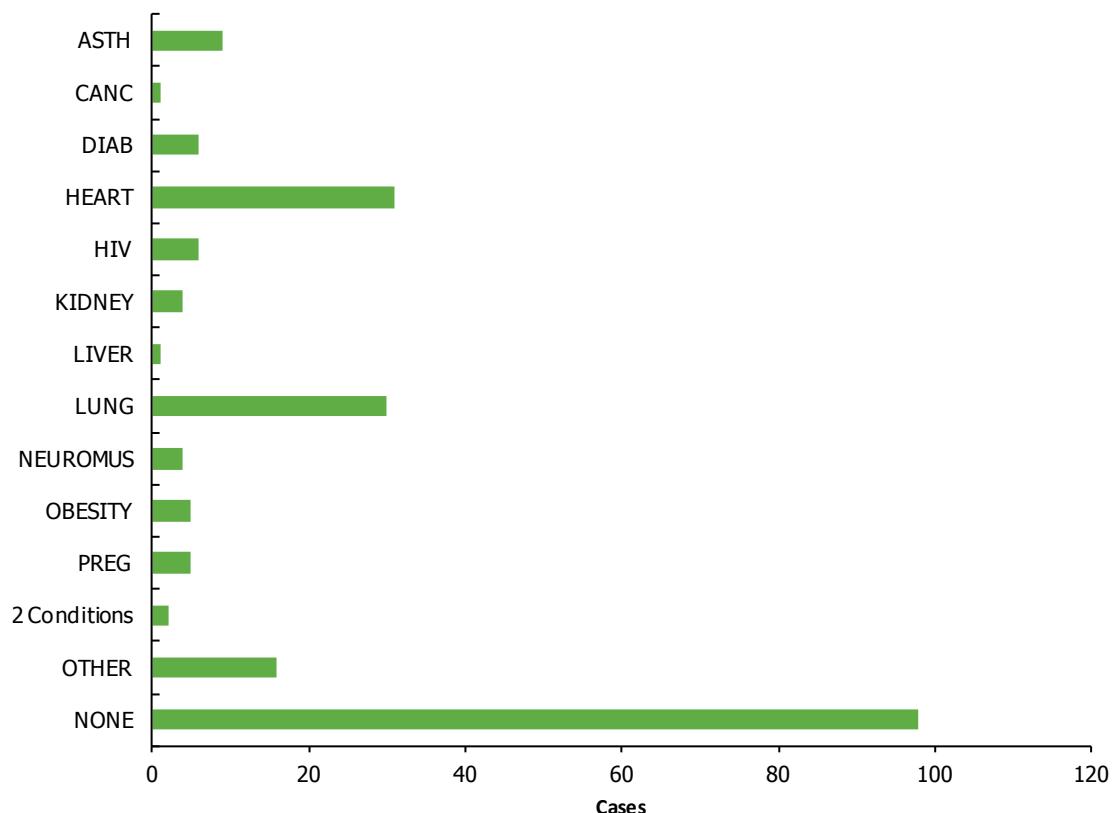
Pathogen	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	12	162
A(H1)pdm09		20
A(sub-typing not performed)	2	53
A(H1)		
A(H3)	10	89
A(H5)		
Influenza B		11
Other pathogen		1
Unknown	26	159
Total	38	333

Table 7: Number of SARI cases by level of care and respiratory support, weeks 40/2011–4/2012

Respiratory support	ICU	Inpatient ward	Other	Unknown
No respiratory support necessary	5	88		
Oxygen therapy	14	51		
Respiratory support given unknown	84	4	57	8
Ventilator	22			

Table 8: Number of influenza confirmed SARI cases by influenza vaccination status, weeks 40/2011–4/2012

Vaccination status	Number of cases	Percentage of cases
Seasonal vaccination	11	6.4
Vaccinated for A(H1N1)2009	2	1.2
Fully vaccinated for seasonal & A(H1N1)2009	12	6.9
Not vaccinated	57	32.9
Unknown	91	52.6
TOTAL	173	

Figure 8: Number of SARI cases by underlying condition, weeks 40/2011–4/2012

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.

Table 9: Additional clinical complications in SARI cases by age group, weeks 40/2011–4/2012

Additional clinical complications	0-11 months	1-4 years	5-14	15-24	25-64	>=65
Acute respiratory distress syndrome	17	34	6	6	23	11
Bronchiolitis	4	2			1	
Encephalitis			1		1	
None	8	21	5	1	6	5
Other (please specify separately)						3
Pneumonia (secondary bacterial infection)	9	25	3	4	17	23
Sepsis/multi-organ failure					1	
Unknown	4	6	5		13	8

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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