

## SURVEILLANCE REPORT

### Weekly influenza surveillance overview

30 December 2010

## Main surveillance developments in week 51/2010 (20 Dec 2010 – 26 Dec 2010)

*This first page contains the main developments of this week and can be printed separately or together with the more detailed information following.*

- Reporting of influenza is less complete over Weeks 51 and 52 due to the holiday period which reduces consulting rates, reporting to national centres and onto ECDC. In addition there is the effect of school closures which seems to reduce transmission of A(H1N1) 2009.
- Sixteen countries experienced influenza activity of low intensity and four countries reported medium intensity. Three countries (Belgium, France and Portugal) reported widespread activity and six countries reported increasing trends.
- A total of 642 influenza viruses were detected during week 51/2010. Of these detections, 65% were type A and 35% were type B. The percentage of sentinel specimens testing positive for influenza virus (33.5%) was lower than in the previous week (39.4%), but this decline may reflect the discontinuity in reporting.
- Fifty-two SARI cases were reported by Belgium and Romania. Of eight cases in this latter country, two were related to influenza infection.

**Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI):** Four western countries (Belgium, Portugal, Spain and UK (Northern Ireland)) reported medium intensity of influenza activity. Belgium, France and Portugal reported widespread activity and sporadic activity was reported by nine countries. For more information, [click here...](#)

**Virological surveillance:** In week 51/2010, eighteen countries reported virological data. Sentinel physicians collected 570 specimens with a slightly decreased percentage (33.5%) testing positive for influenza virus compared with the previous week (39.4%). For more information, [click here...](#)

**Hospital surveillance of severe acute respiratory infection (SARI):** Fifty-two SARI cases were reported by Belgium and Romania. Of the eight cases from the latter country, two were related to A(H1N1) pandemic infection. For more information, [click here...](#)

# Sentinel surveillance (ILI/ARI)

## Weekly analysis – epidemiology

Sixteen countries experienced influenza activity of low intensity and four countries (Belgium, Portugal, Spain and the UK (Northern Ireland)) reported medium intensity. (Table 1, Map 1).

Three countries, Belgium, France and Portugal, reported widespread activity. Regional activity was reported by the Netherlands and local activity by Spain. Sporadic activity was reported by nine countries, while five countries (Austria, Bulgaria, Greece, Poland and Romania) reported no influenza activity (Table 1, Map 2).

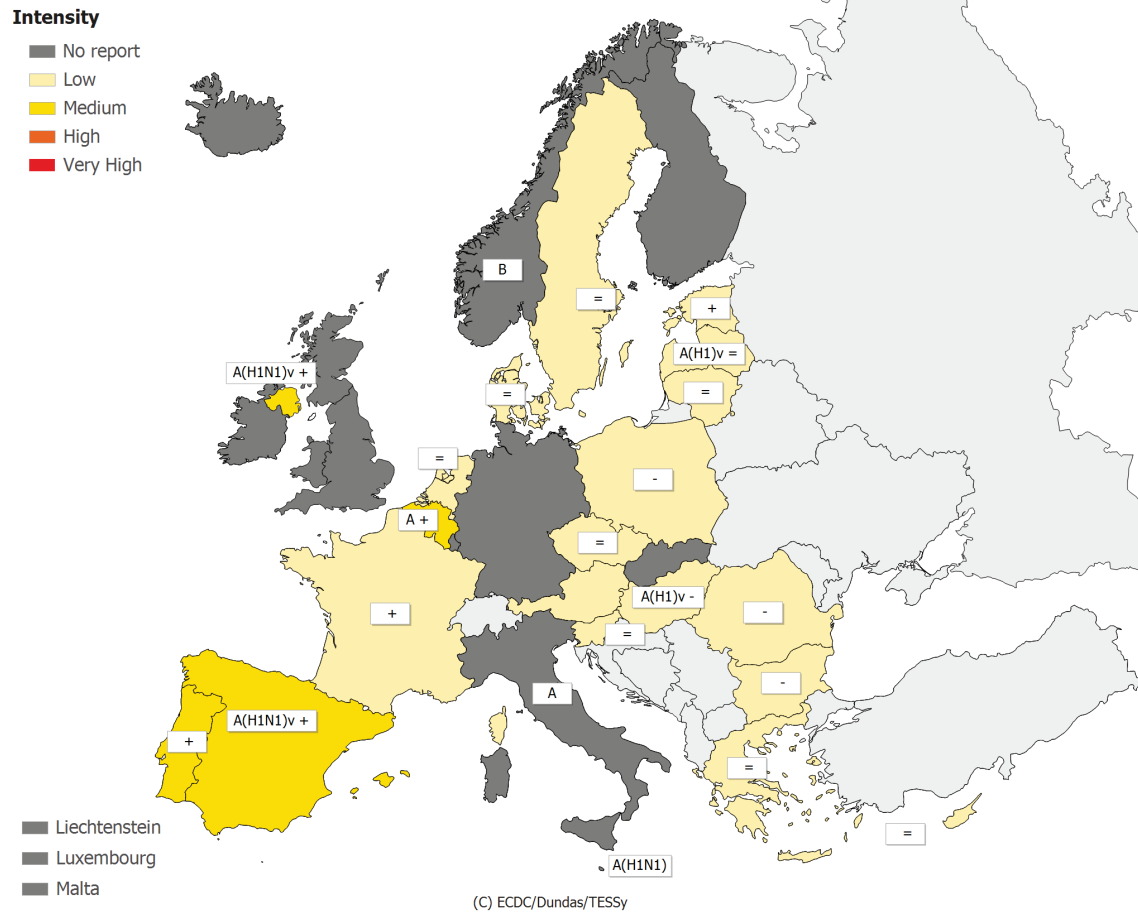
In week 51/2010, six countries (Belgium, Estonia, France, Portugal, Spain and the UK (Northern Ireland)) reported increasing trends, nine countries reported stable trends and four countries (Bulgaria, Hungary, Poland and Romania) reported a decreasing trend (Table 1, Map 2).

## Country comments

**Sweden:** very few health centres have reported this week due to the Christmas holidays.

**UK (England):** Very low return this week due to holiday period.

**Map 1: Intensity for week 51/2010**

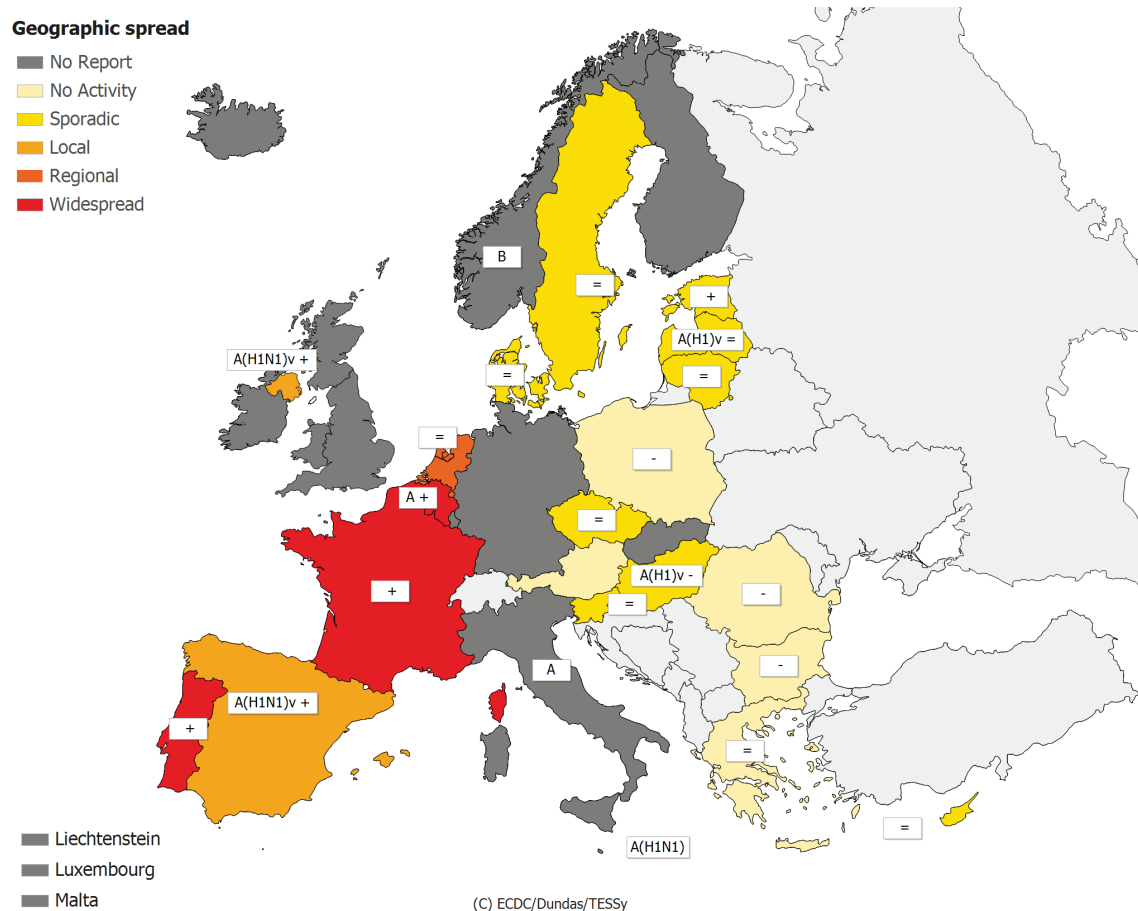


\* A type/subtype is reported as dominant when > 40 % of all samples are positive for the type/subtype.

Legend:

<b>Low</b>	No influenza activity or influenza at baseline levels	-	Decreasing clinical activity
<b>Medium</b>	Usual levels of influenza activity	+	Increasing clinical activity
<b>High</b>	Higher than usual levels of influenza activity	=	Stable clinical activity
<b>Very high</b>	Particularly severe levels of influenza activity	<b>A</b>	Type A
		<b>A(H1)v</b>	Type A, Subtype H1v
		<b>A(H1N1)</b>	Type A, Subtype H1N1
		<b>A(H1N1)v</b>	Type A, Subtype H1N1v
		<b>B</b>	Type B

**Map 2: Geographic spread for week 51/2010**



\* 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:

<b>No activity</b>	No evidence of influenza virus activity (clinical activity remains at baseline levels)	-	Decreasing clinical activity
<b>Sporadic</b>	Isolated cases of laboratory confirmed influenza infection	+	Increasing clinical activity
<b>Local outbreak</b>	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)	=	Stable clinical activity
<b>Regional activity</b>	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)	<b>A</b>	Type A
<b>Widespread</b>	Influenza activity above baseline levels in one or more regions with a population comprising 50% or more of the country's population (laboratory confirmed)	<b>A(H1)v</b>	Type A, Subtype H1v
		<b>A(H1N1)</b>	Type A, Subtype H1N1
		<b>A(H1N1)v</b>	Type A, Subtype H1N1v
		<b>B</b>	Type B

**Table 1: Epidemiological and virological overview by country, week 51/2010**

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	No activity	Unknown (no information available)	8	None	25.0	-	19.8	Graphs	Graphs
Belgium	Medium	Widespread	Increasing	35	A	80.0	267.2	1982.0	Graphs	Graphs
Bulgaria	Low	No activity	Decreasing	-	None	0.0	-	736.2	Graphs	Graphs
Cyprus	Low	Sporadic	Stable	-	-	0.0	-*	-*	Graphs	Graphs
Czech Republic	Low	Sporadic	Stable	-	-	0.0	23.7	833.6	Graphs	Graphs
Denmark	Low	Sporadic	Stable	7	None	14.3	83.1	-	Graphs	Graphs
Estonia	Low	Sporadic	Increasing	21	None	23.8	7.3	268.6	Graphs	Graphs
Finland				-	-	0.0	-	-		
France	Low	Widespread	Increasing	83	None	34.9	-	2158.6	Graphs	Graphs
Germany				39	None	28.2	-	-	Graphs	Graphs
Greece	Low	No activity	Stable	6	None	0.0	61.4	-	Graphs	Graphs
Hungary	Low	Sporadic	Decreasing	27	AH1v	3.7	75.4	-	Graphs	Graphs
Iceland				-	-	0.0	-	-		
Ireland				-	-	0.0	-	-		
Italy				46	A	28.3	-	-	Graphs	Graphs
Latvia	Low	Sporadic	Stable	0	AH1v	0.0	1.8	733.4	Graphs	Graphs
Lithuania	Low	Sporadic	Stable	-	-	0.0	4.8	428.4	Graphs	Graphs
Luxembourg				13	-	38.5	-*	-*	Graphs	Graphs
Malta				10	AH1N1	40.0	-	-	Graphs	Graphs
Netherlands	Low	Regional	Stable	10	None	30.0	23.4	-	Graphs	Graphs
Norway				17	B	41.2	-	-	Graphs	Graphs
Poland	Low	No activity	Decreasing	3	None	0.0	52.2	-	Graphs	Graphs
Portugal	Medium	Widespread	Increasing	4	None	100.0	55.1	-	Graphs	Graphs
Romania	Low	No activity	Decreasing	37	None	0.0	17.6	735.5	Graphs	Graphs
Slovakia				3	None	0.0	-	-	Graphs	Graphs
Slovenia	Low	Sporadic	Stable	-	-	0.0	1.5	1378.1	Graphs	Graphs
Spain	Medium	Local	Increasing	151	sw0AH1N1	43.7	82.4	-	Graphs	Graphs
Sweden	Low	Sporadic	Stable	24	None	8.3	10.0	-	Graphs	Graphs
UK - England				-	-	0.0	-	-		
UK - Northern Ireland	Medium	Local	Increasing	26	sw0AH1N1	38.5	99.4	691.5	Graphs	Graphs
UK - Scotland				-	-	0.0	-	-		
UK - Wales				-	-	0.0	-	-		
Europe				570		33.5				Graphs

\*Incidence per 100 000 is not calculated for these countries as no population denominator is provided.  
 Note: Liechtenstein is not reporting to the European Influenza Surveillance Network

## Description of the system

This surveillance is based on nationally organised sentinel networks of physicians, mostly general practitioners (GPs), covering at least 1–5% of the population in their countries. All EU/EEA Member States (except Liechtenstein) are participating. 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 51/2010, 20 countries and the UK (Northern Ireland) reported virological data. Sentinel physicians collected 570 specimens with a decreasing percentage (33.5%) testing positive for influenza virus compared with the previous week (39.4%) (Tables 1 and 2, Figure 3). In addition, 451 non-sentinel source specimens (i.e. specimens collected for diagnostic purposes in hospitals) were reported positive for influenza virus.

Of the 642 influenza viruses detected during week 51/2010, 420 (65%) were type A and 222 (35%) were type B. The A(H1N1) 2009 virus was reported as dominant in Belgium, Hungary, Italy, Latvia, Malta, Spain and UK (Northern Ireland) while influenza B virus was dominant in Norway. Of the 312 sentinel influenza A viruses that were sub-typed, 302 (97%) were A(H1N1) 2009 and 10 (3%) were A(H3) viruses (Table 2).

Since week 40/2010, of the 3 122 influenza detections in sentinel and non-sentinel specimens, 2 130 (68%) were type A and 992 (32%) were type B influenza viruses. Of 1 245 influenza A viruses sub-typed, 1 149 (92%) were A(H1N1) 2009 and 96 (8%) were A(H3) viruses (Table 2). Trends of virological detections since week 40/2010 are shown in Figures 1–3.

Since week 40/2010, 180 influenza viruses from sentinel and non-sentinel specimens have been characterised antigenically (Figure 4): 95 as A/California/7/2009 (H1N1)-like; 25 as A/Perth/16/2009 (H3N2)-like; 54 as B/Brisbane/60/2008-like (Victoria lineage) and six as B/Florida/4/2006-like (Yamagata lineage).

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

In week 51/2010, respiratory syncytial virus detections apparently decreased, but it is impossible to estimate the trend as only 18 countries and the UK (Northern Ireland) reported in week 51/2010, compared with 26 countries the previous week (Figure 5).

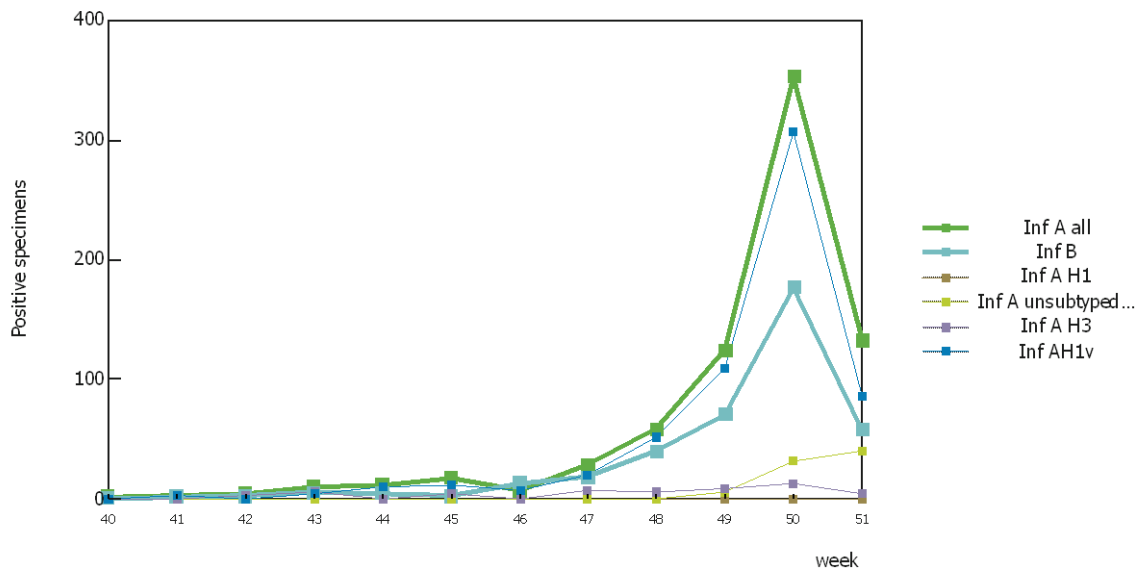
In terms of antiviral resistance since week 40/2010, a total of 185 influenza A(H1N1) 2009 viruses and six influenza B viruses have been tested for susceptibility to neuraminidase inhibitors. Data were provided for either single location (e.g. H275Y only) or multiple location substitution analysis (full sequencing) and/or phenotyping (IC<sub>50</sub> determination) and should be interpreted in this context (Table 2). All but two viruses were sensitive to both oseltamivir and zanamivir. Two A(H1N1) 2009 viruses from the UK had the H275Y substitution known to confer resistance to oseltamivir while retaining susceptibility to zanamivir. Both viruses were from patients who had not been treated with oseltamivir.

**Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2010–51/2010**

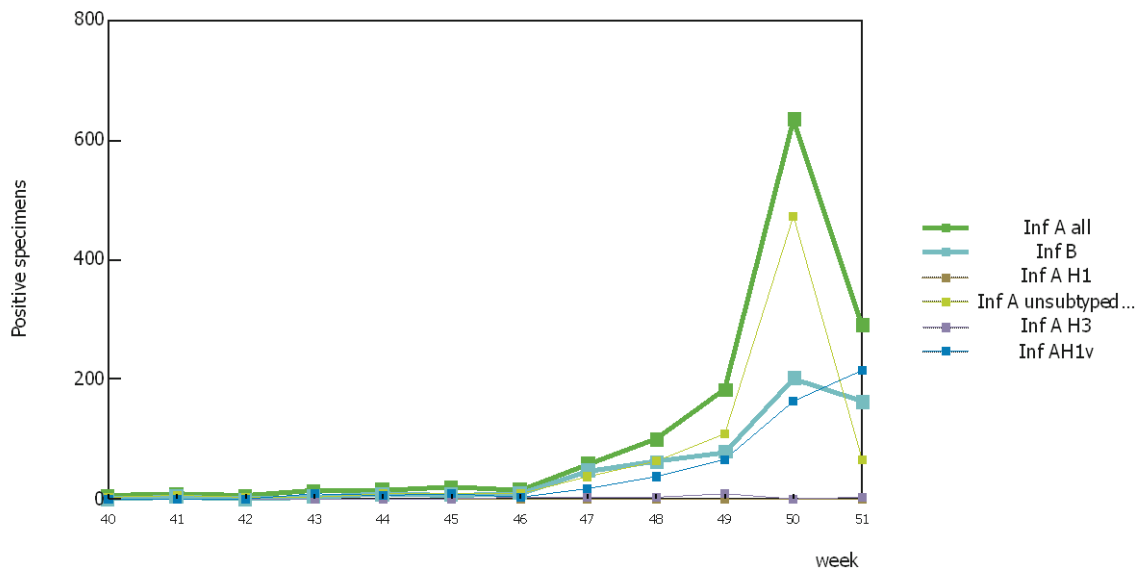
Virus type/subtype	Current Period		Season	
	Sentinel	Non-sentinel	Sentinel	Non-sentinel
Influenza A	133	287	757	1373
A (pandemic H1N1)	87	215	616	533
A (subtyping not performed)	41	67	84	801
A (not subtypable)	0	0	0	0
A (H3)	5	5	57	39
A (H1)	0	0	0	0
Influenza B	58	164	399	593
<b>Total Influenza</b>	<b>191</b>	<b>451</b>	<b>1156</b>	<b>1966</b>

*Note:* A(H1)2009, A(H3) and A(H1) includes both N-subtyped and non-N-subtyped viruses

**Figure 1: Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40/2010–51/2010**

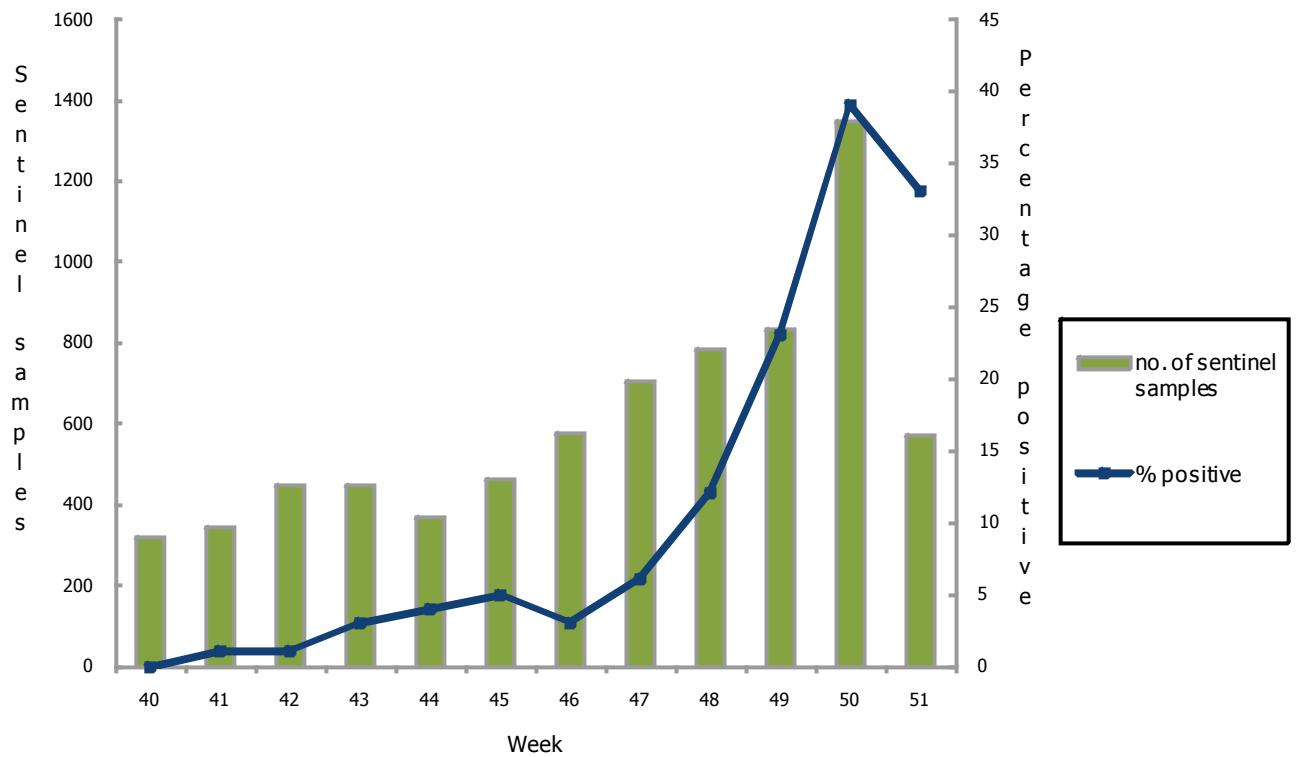


**Figure 2: Number of non-sentinel specimens positive for influenza virus by type, subtype and week of report, weeks 40/2010–51/2010**

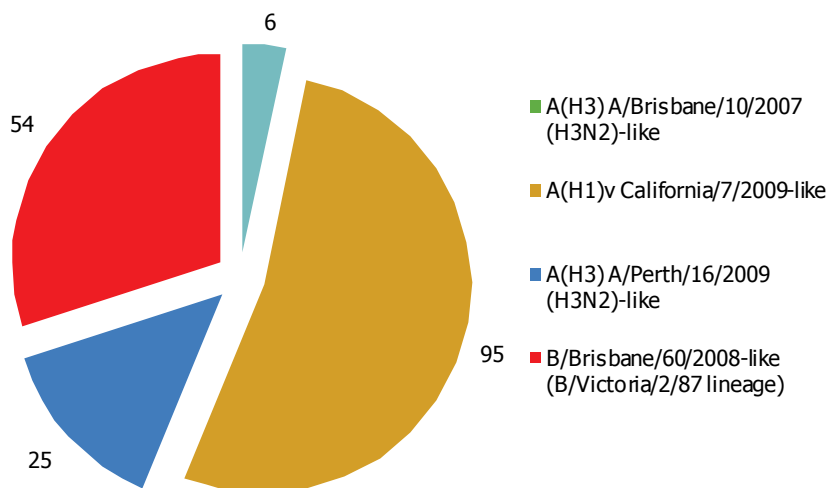




**Figure 3: Proportion of sentinel samples positive for influenza virus, weeks 40/2010–51/2010**



**Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2010–51/2010**

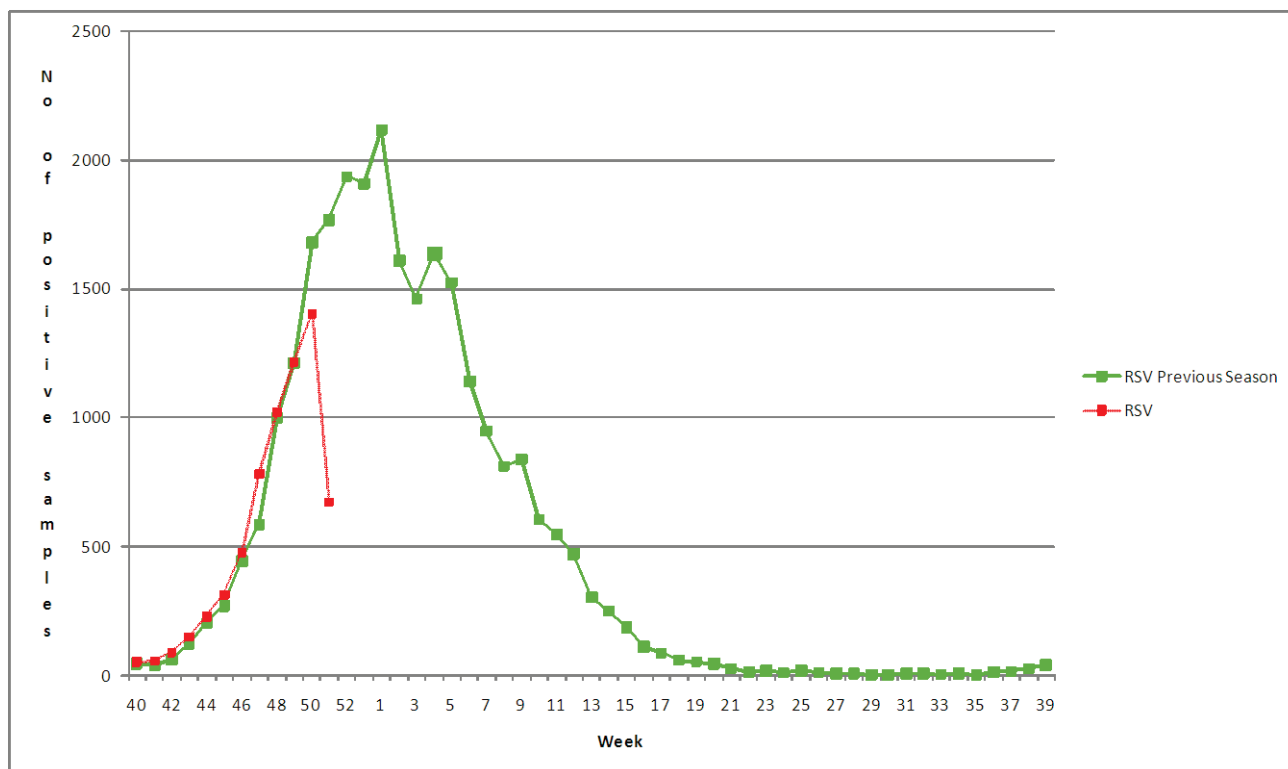


**Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2010–51/2010**

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)	0	0	0	0	0	0
A(H1N1)	0	0	0	0	0	0
A(H1N1)2009	185	2 (1.1)			0	0
B	6	0	6	0	NA*	NA*

\* NA - not applicable, as M2 inhibitors do not act against influenza B viruses  
 Data were provided for either single location (e.g. H275Y only) or multiple location substitution analysis (full sequencing) and/or phenotyping (IC<sub>50</sub> determination) and should be interpreted in this context.

**Figure 5: Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2010–51/2010**



## 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 acute respiratory infection (SARI)

## Weekly analysis – SARI

During week 51/2010, 44 SARI cases were reported by Belgium and eight cases by Romania (Table 5). Two cases in Romania were related to influenza A(H1N1) pandemic infection. Of 49 cases, 21 (43%) were in individuals under two years old and the gender ratio (male/female) was one. Of ten patients with available information, two were vaccinated and of 52 patients for whom information was available, 43 had no underlying conditions.

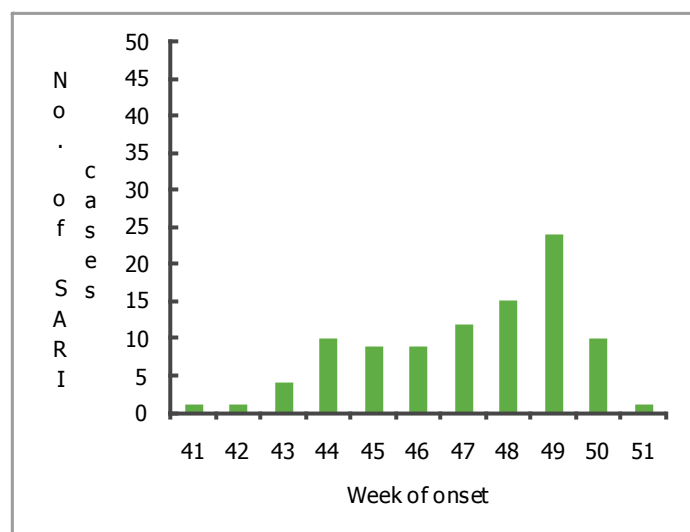
Of 52 patients, 26 needed oxygen therapy and only one received oseltamivir as antiviral treatment. In Romania, all eight cases presented an acute respiratory distress symptom.

Since week 40/2010, 507 SARI cases have been reported by four countries with five fatalities. In documented cases, 19 were infected with A(H1N1) 2009 virus, one with A(H3N2) and three with influenza B virus (table 6).

**Table 4: Cumulative number of SARI cases, weeks 40/2010 – week 51/2010**

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
Belgium	406				
Spain	23		2		
Portugal	5				
Romania	71	1.11	3	0.05	6413821
Slovakia	2				
Total	507		5		6413821

**Figure 6: Number of SARI cases by week of onset, weeks 40/2010 – week 51/2010**



**Table 5: Number of SARI cases by age and gender, week 51/2010**

Age groups	Male	Female	Unknown
Under 2	13	8	1
2-17	10	12	1
18-44	2	1	
45-59		1	
>=60		2	1
Total	25	24	3

**Table 6: Number of SARI cases by influenza type and subtype, week 51/2010**

Virus type/subtype	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A		26
A (H1) 2009		19
A(subtyping not performed)		6
A(H3)		1
A(H1)		
A(H5)		
Influenza B		3
Unknown	50	450
Total	52	507

**Table 7: Number of SARI cases by antiviral treatment, week 51/2010**

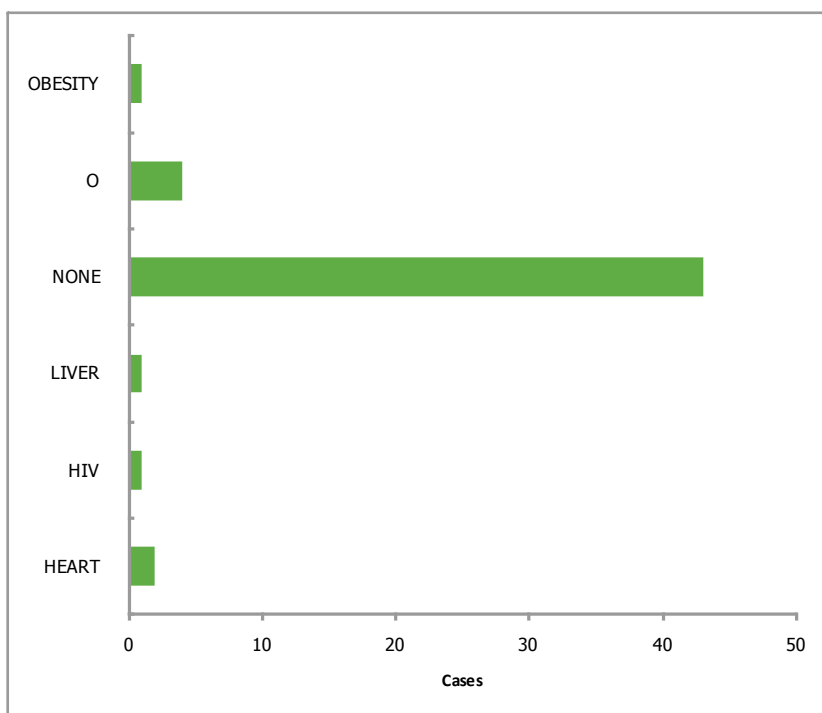
Antiviral treatment	Number of patients who received prophylaxis	Number of patients who received anti-viral treatment
Oseltamivir		1
Unknown	44	44
None	8	7
Total	52	52

**Table 8: Number of SARI cases by level of care and respiratory support, week 51/2010**

Respiratory support	ICU	Inpatient ward	Other	Unknown
No respiratory support necessary			26	
Oxygen therapy	1	5	15	
Ventilator	5			

**Table 9: Number of SARI cases by vaccination status, week 51/2010**

Vaccination Status	Number Of Cases	Percentage of cases
Not vaccinated	8	15
Seasonal vaccination	2	3.8
Unknown	42	80.8
TOTAL	52	

**Figure 7: Number of SARI cases by underlying condition, week 51/2010**

Note: The data is collected for asthma, cancer, diabetes, chronic heart disease, HIV/other immune deficiency, kidney-related conditions, liver-related conditions, chronic lung disease, neurocognitive disorder (including seizure), neuromuscular disorder, obesity (BMI between 30 and 40), morbid obesity (BMI above 40), pregnancy, other, underlying condition unknown and for no underlying condition.

**Table 10: Number of underlying conditions in SARI cases by age group, week 51/2010**

Underlying condition/risk factor	Infant below 2 years	2-17 years	18-44 years	45-59 years	>=60 years
Chronic heart disease	1				1
HIV/other immune deficiency					1
Liver-related condition				1	
No underlying condition	20	20	2		1
Other (please specify separately)	1	3			
Obesity (BMI between 30 and 40)			1		

**Table 11: Additional clinical complications in SARI cases by age group, week 51/2010**

Additional clinical complications	Infant below 2 years	2-17 years	18-44 years	45-59 years	>=60 years
Acute respiratory distress syndrome	3	2	1	1	1
Unknown	19	21	2		2

The report text was written by an editorial team at the European Centre for Disease Prevention and Control (ECDC): Eeva Broberg, Flaviu Plata, Phillip Zucs 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 Bianca Sniijders (RIVM Bilthoven, The Netherlands) and Thedi Ziegler (National Institute for Health and Welfare, Finland).

Maps and commentary used in this Weekly Influenza Surveillance Overview (WISO) do not imply any opinions whatsoever of ECDC or its partners on the legal status of the countries and territories shown or concerning their borders.

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 numbers in the database.

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