

## SURVEILLANCE REPORT

### Weekly influenza surveillance overview

17 December 2010

## Main surveillance developments in week 49/2010 (06 Dec 2010 – 12 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.*

- During week 49/2010, 24 of the 25 reporting countries and the UK (Northern Ireland, Scotland and Wales) experienced influenza activity of low intensity while the UK (England) reported medium intensity and activity above the baseline. Fourteen countries reported an increasing trend. Several severe cases of influenza and deaths have been reported in the last three weeks in the UK.
- During week 49/2010, 22% of sentinel specimens were positive for influenza. Of the 347 influenza viruses detected during week 49/2010, 234 (67%) were type A, the majority of which were A(H1N1) 2009, 113 (33%) were type B and a small number A(H3). The circulating viruses detected to date, have been similar to the current vaccine viruses. This indicates that the annual influenza epidemics are starting in Europe and that at present they are dominated by influenza A(H1N1) 2009 and B viruses.
- Eighty-six SARI cases were reported by two countries (Belgium and Romania) during week 49/2010. For all of these cases, the causative pathogen was unknown. Seventy-three percent of the SARI cases were seen in children younger than seventeen years of age, all of whom had no underlying conditions.

**Sentinel surveillance of influenza-like illness (ILI)/acute respiratory infection (ARI):** Twenty four of the 25 reporting countries and the UK (Northern Ireland, Scotland and Wales) experienced influenza activity of low intensity while the UK (England) reported medium intensity. Fourteen countries reported increasing trend. For more information, [click here](#).

**Virological surveillance:** During week 49/2010, 22.1% of sentinel specimens were positive for influenza. Of the 347 influenza viruses detected during week 49/2010, 234 (67%) were type A and 113 (33%) were type B. For more information, [click here](#).

**Hospital surveillance of severe acute respiratory infection (SARI):** During week 49/2010, 86 SARI cases were reported, four of which had symptom onset during this week. For more information, [click here](#).

# Sentinel surveillance (ILI/ARI)

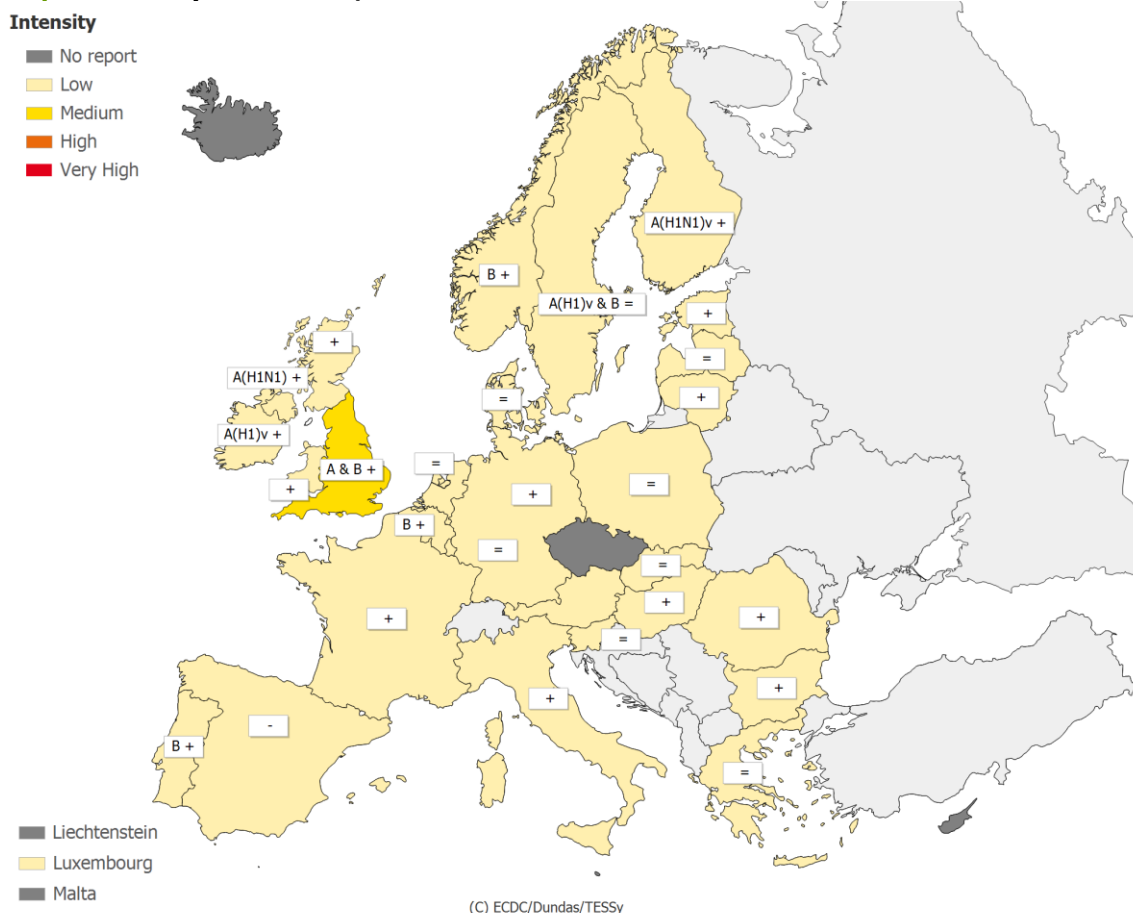
## Weekly analysis – epidemiology

Twenty four of the 25 reporting countries and the UK (Northern Ireland, Scotland and Wales) experienced influenza activity of low intensity. Only the UK (England) reported medium intensity and activity above the baseline (Table 1, Map 1).

Sporadic activity was reported by 13 countries and the UK (Northern Ireland, Scotland and Wales). Norway reported local spread while Finland and Italy reported regional spread. The UK (England) has reported widespread geographic spread. Eight countries reported no activity (Table 1, Map 2).

Fourteen countries reported increasing trends in week 49/2010. Nine countries reported stable trends while Spain reported a decreasing trend. (Table 1, Map 2).

**Map 1: Intensity for week 49/2010**



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

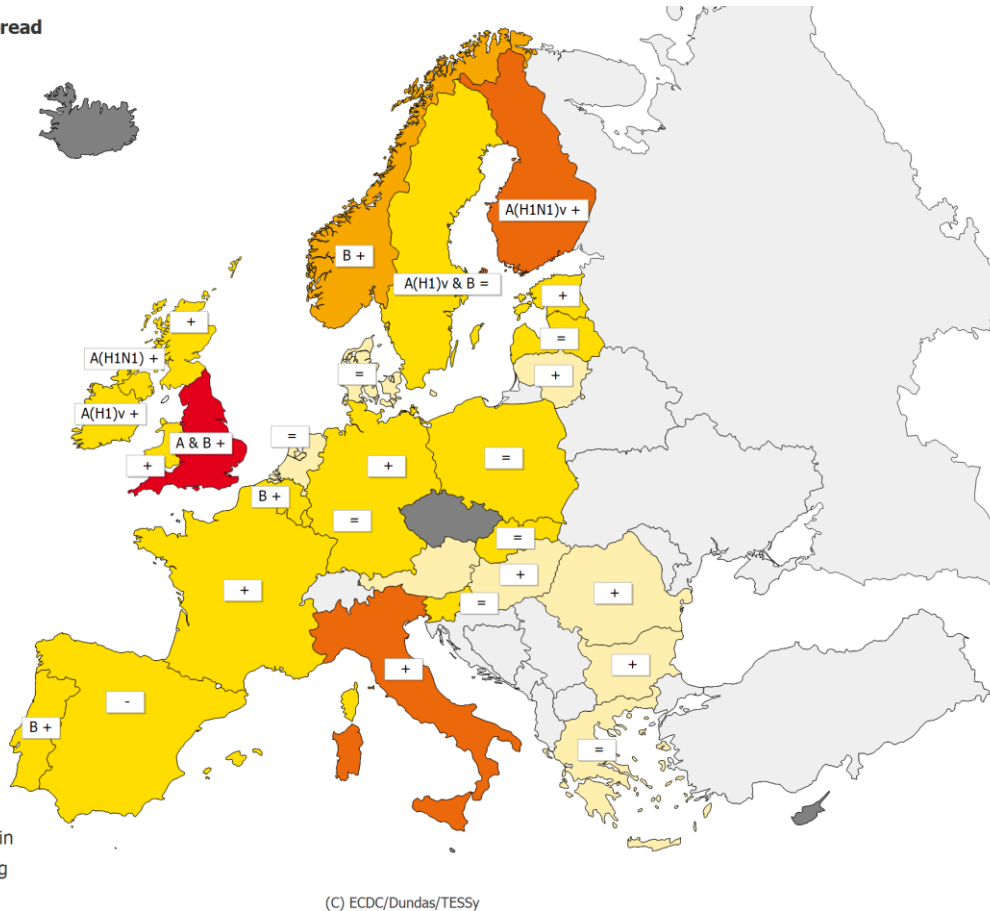
Legend:

<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 &amp; B</b>	Type A and B
		<b>A(H1)v</b>	Type A, Subtype H1v
		<b>A(H1)v &amp; B</b>	Type B and 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 49/2010**

**Geographic spread**

- No Report
- No Activity
- Sporadic
- Local
- Regional
- Widespread



\* 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 &amp; B</b>	Type A and B
<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(H1)v &amp; B</b>	Type B and 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 49/2010**

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
			Unknown (no information available)							
Austria	Low	No activity		6	None	16.7	-	25.1	Graphs	Graphs
Belgium	Low	Sporadic	Increasing	29	B	31.0	67.5	1027.9	Graphs	Graphs
Bulgaria	Low	No activity	Increasing	39	None	0.0	-	963.0	Graphs	Graphs
Cyprus				-	-	0.0	-	-		
Czech Republic				-	-	0.0	-	-		
Denmark	Low	No activity	Stable	8	None	37.5	78.7	-	Graphs	Graphs
Estonia	Low	Sporadic	Increasing	26	None	3.8	6.4	309.5	Graphs	Graphs
Finland	Low	Regional	Increasing	34	swoAH1N1	38.2	-	-	Graphs	Graphs
France	Low	Sporadic	Increasing	75	None	20.0	-	1908.7	Graphs	Graphs
Germany	Low	Sporadic	Increasing	39	None	2.6	-	1109.8	Graphs	Graphs
Greece	Low	No activity	Stable	2	None	0.0	53.4	-	Graphs	Graphs
Hungary	Low	No activity	Increasing	66	None	0.0	122.5	-	Graphs	Graphs
Iceland				-	-	0.0	-	-		
Ireland	Low	Sporadic	Increasing	6	AH1v	83.3	14.4	-	Graphs	Graphs
Italy	Low	Regional	Increasing	6	None	0.0	150.8	-	Graphs	Graphs
Latvia	Low	Sporadic	Stable	0	None	0.0	0.0	1000.1	Graphs	Graphs
Lithuania	Low	No activity	Increasing	-	-	0.0	1.7	533.6	Graphs	Graphs
Luxembourg	Low	Sporadic	Stable	6	None	33.3	-*	-*	Graphs	Graphs
Malta				-	-	0.0	-	-		
Netherlands	Low	No activity	Stable	11	None	9.1	37.6	-	Graphs	Graphs
Norway	Low	Local	Increasing	8	B	62.5	41.9	-	Graphs	Graphs
Poland	Low	Sporadic	Stable	11	None	18.2	62.6	-	Graphs	Graphs
Portugal	Low	Sporadic	Increasing	5	B	40.0	35.0	-	Graphs	Graphs
Romania	Low	No activity	Increasing	35	None	0.0	18.9	759.2	Graphs	Graphs
Slovakia	Low	Sporadic	Stable	6	None	0.0	199.9	1793.0	Graphs	Graphs
Slovenia	Low	Sporadic	Stable	12	None	8.3	1.3	1134.9	Graphs	Graphs
Spain	Low	Sporadic	Decreasing	26	None	19.2	13.6	-	Graphs	Graphs
Sweden	Low	Sporadic	Stable	15	BAH1v	6.7	4.9	-	Graphs	Graphs
UK - England	Medium	Widespread	Increasing	183	AB	42.1	34.6	666.4	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Increasing	6	AH1N1	16.7	29.2	406.7	Graphs	Graphs
UK - Scotland	Low	Sporadic	Increasing	6	None	33.3	1.1	160.6	Graphs	Graphs
UK - Wales	Low	Sporadic	Increasing	-	-	0.0	22.5	-	Graphs	Graphs
Europe				666		22.1				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

## Country comments

**UK (England):** The general practitioner consultation rate threshold has been breached, calls to NHS Direct (nurse-led medical helpline) for flu-related illnesses are increasing, and many (mainly school) outbreaks—of influenza H1N1 (2009) and influenza B—have been reported, indicating influenza transmission in the community. Several severe cases of influenza have been reported in the last three weeks resulting in an increase in ITU-bed occupancy and in the provision of beds used for Extra-Corporeal Membrane Oxygenation (ECMO). The majority of these patients are younger than 65 years of age. Further information can be found on the Health Protection Agency website: [http://www.hpa.org.uk/web/HPAwebFile/HPAweb\\_C/1287146386672](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1287146386672)

**UK (Scotland):** A small number of severe acute respiratory infections (SARI) resulting in intensive care admission in individuals with confirmed influenza A (H1N1) 2009 virus.

## Description of the system

This surveillance is based on nationally organized 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 49/2010, 24 countries reported virological data. Sentinel physicians collected 666 swabs with an increased percentage (22%) of specimens testing positive for influenza virus compared to 13% last week (Tables 1 and 2, Figure 3). Belgium, Finland, France, Spain and the UK (England) reported 31, 38, 20, 19 and 42% positive specimens, respectively (Table 1). In addition, 200 non-sentinel source specimens (i.e. specimens collected for diagnostic purpose in hospitals) were reported positive for influenza virus. Of the 347 influenza viruses detected during week 49/2010, 234 (67%) were type A and 113 (33%) were type B. The dominant virus types varied between countries: Belgium, Norway and Portugal reported predominantly influenza B virus; Finland, Ireland and the UK (Northern Ireland) reported A(H1N1) 2009; Sweden a mixture of the previous two; and the UK (England) a mixture of influenza A and B viruses (Table 1). Of the 127 sentinel influenza A viruses that were sub-typed, 121 (95%) were A(H1N1) 2009 and six (4.7%) were A(H3) viruses (Table 2).

Since week 40/2010, of the 981 influenza detections in sentinel and non-sentinel specimens, 633 (65%) were influenza A and 348 (35%) were influenza B viruses. Of 367 influenza A viruses sub-typed, 314 (86%) were A(H1N1) 2009 and 53 (14%) were A(H3) viruses (Table 2). Trends of virological detections since week 40/2010 are shown in Figures 1–3.

Since week 40/2010, 77 influenza viruses from sentinel and non-sentinel specimens have been characterised antigenically (Figure 4): 37 as A/California/7/2009 (H1N1)-like; 13 as A/Perth/16/2009 (H3N2)-like; 26 as B/Brisbane/60/2008-like (Victoria lineage); and one 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.

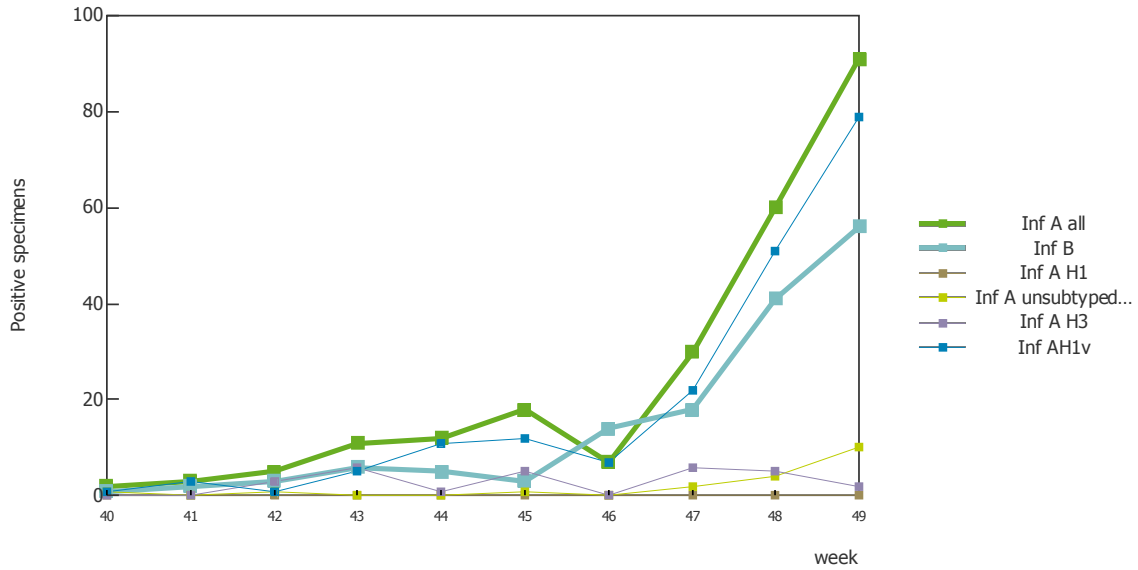
In week 49/2010, respiratory syncytial virus detections were reported by 16 countries, similar to last week's levels (Figure 5).

**Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2010–49/2010**

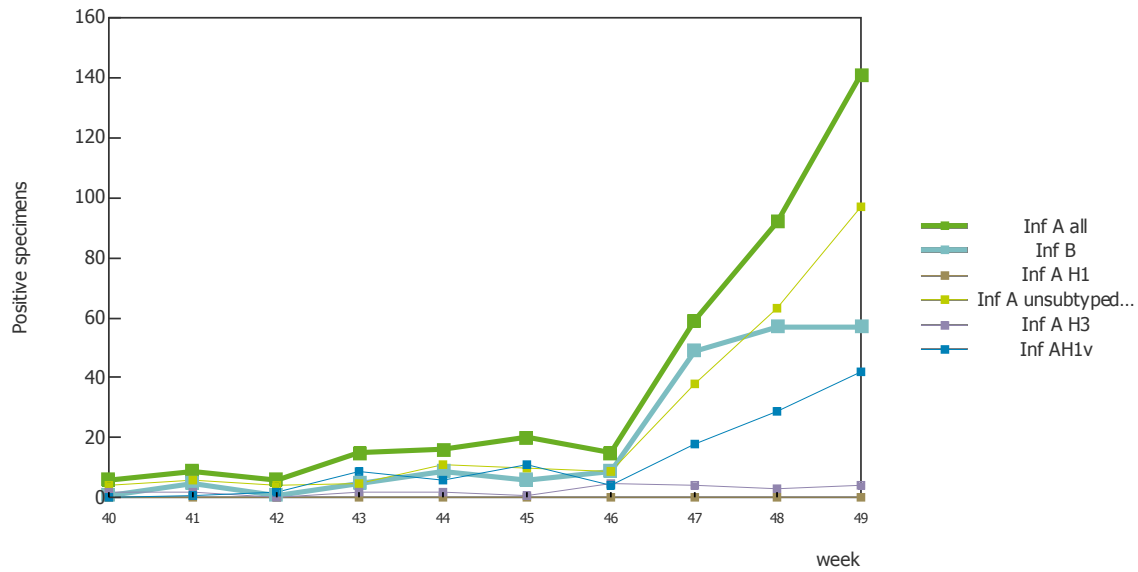
Virus type/subtype	Current Period		Season	
	Sentinel	Non-sentinel	Sentinel	Non-sentinel
Influenza A	91	143	239	394
A (pandemic H1N1)	79	42	192	122
A (subtyping not performed)	10	97	19	247
A (not subtypable)	0	0	0	0
A (H3)	2	4	28	25
A (H1)	0	0	0	0
Influenza B	56	57	149	199
<b>Total Influenza</b>	<b>147</b>	<b>200</b>	<b>388</b>	<b>593</b>

*Note:* A(pandemic H1N1), A(H3) and A(H1) include both N-subtyped and non- N-subtyped viruses.

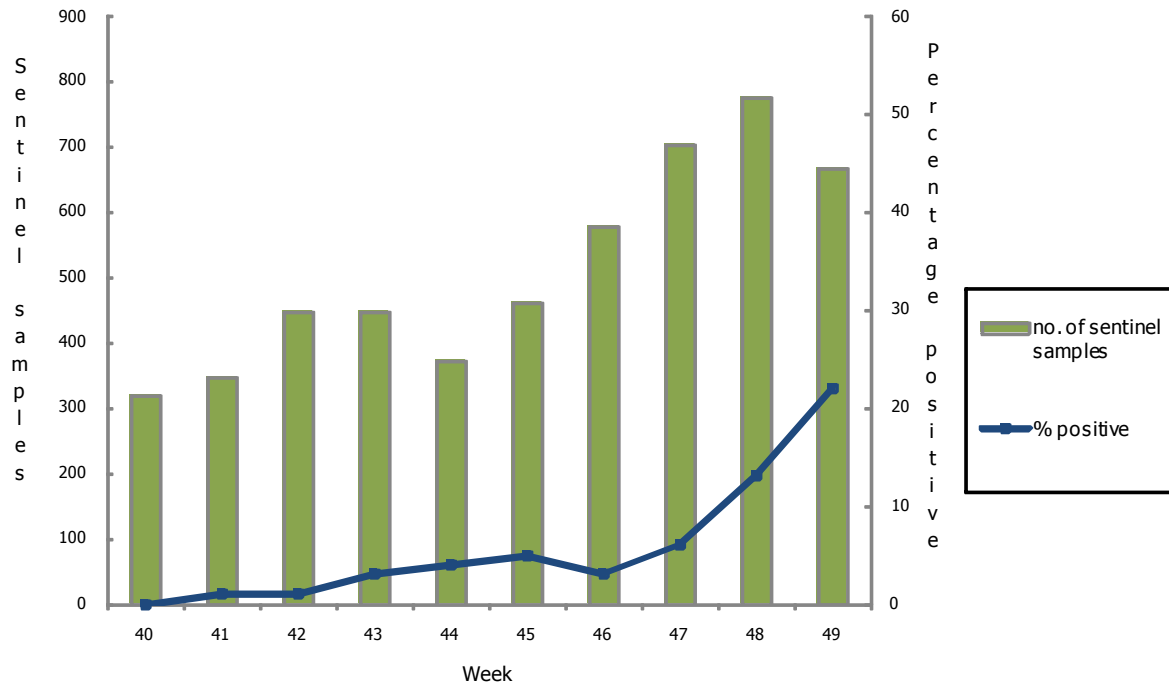
**Figure 1: Number of sentinel specimens positive for influenza, by type, subtype and by week of report, weeks 40/2010–49/2010**



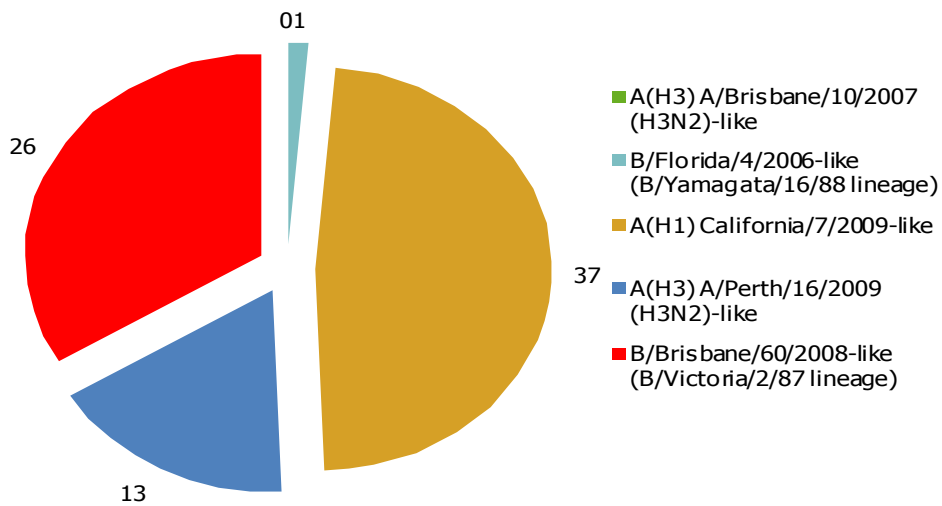
**Figure 2: Number of non-sentinel specimens positive for influenza by type, subtype and week of report, weeks 40/2010–49/2010**



**Figure 3: Proportion of sentinel samples positive for influenza, weeks 40/2010–49/2010**

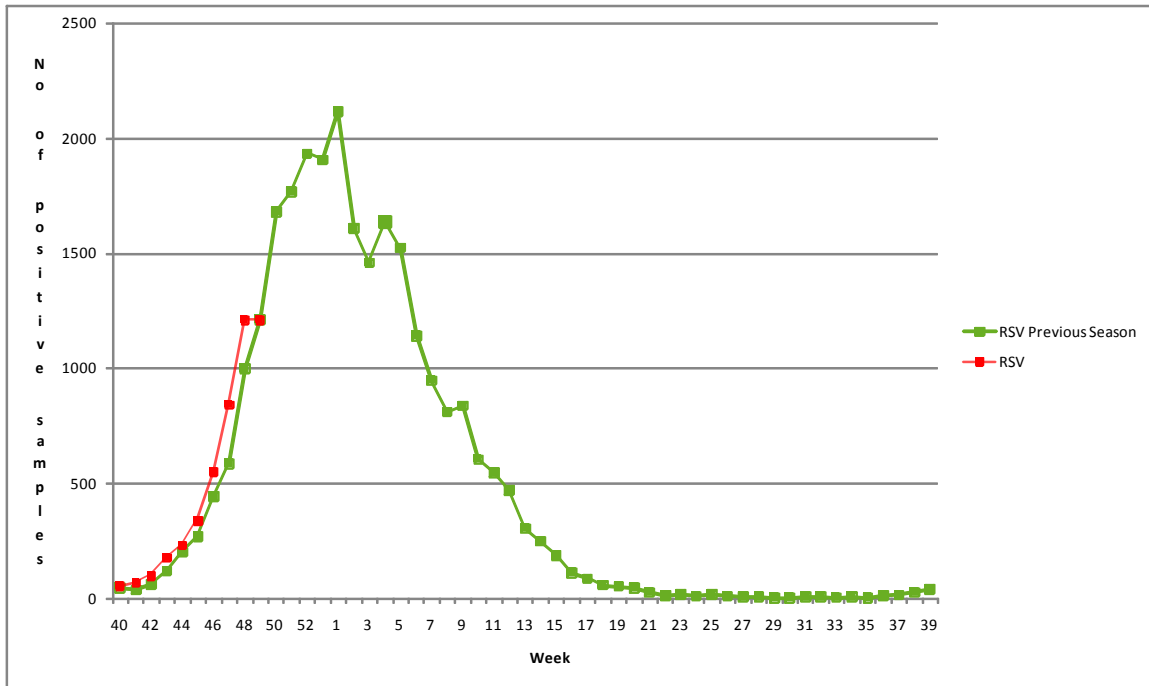


**Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2010–49/2010**





**Figure 5: Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2010–49/2010**



### 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 (ILI) 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

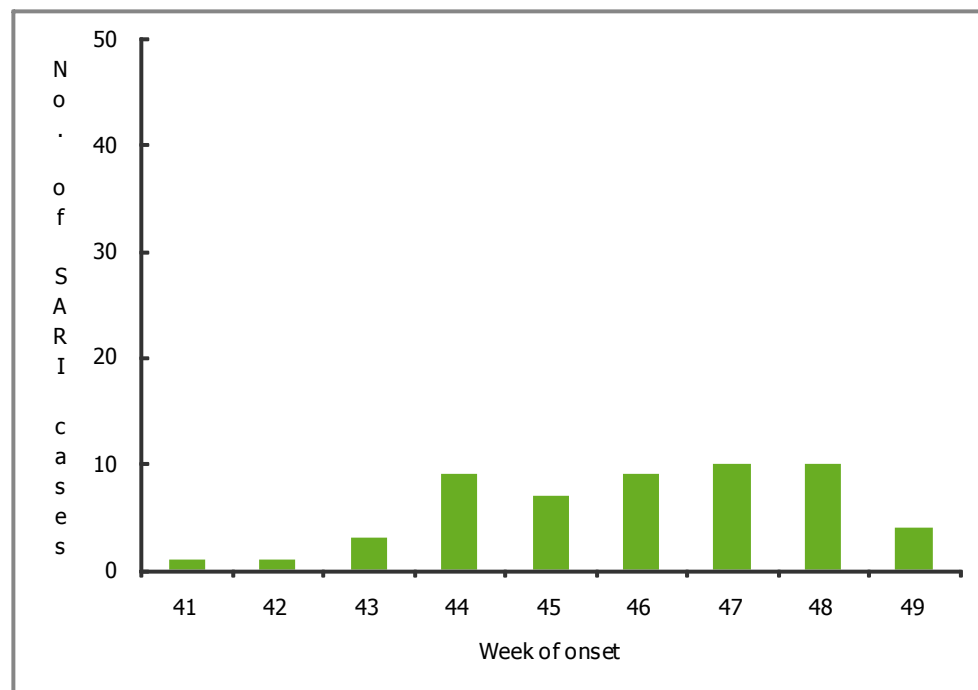
During weeks 40–49/2010, a total of 368 SARI cases were reported to TESSy (Table 3). In week 49/2010, 86 SARI cases were reported: 74 in Belgium and 12 in Romania. Four of these SARI cases had symptom onset during week 49/2010. The gender ratio (male/female) was 1.3 (Table 4) and no information was available regarding the possible causative pathogens (Table 5).

Eleven cases were admitted to an intensive care unit and eight cases needed respiratory support (Table 7). The vaccination status of fifteen patients was known and three were vaccinated (Table 8). Of the remaining twelve patients who were not vaccinated, six had no underlying conditions and four were infants less than four years old. Sixty three (73%) of the SARI cases were seen in children below seventeen years of age, all without underlying conditions, and 43 of these were in children below two years of age (Table 9). The only fatal case reported, was not related to influenza infection (Table 3).

**Table 3: Cumulative number of SARI cases, weeks 40/2010–week 49/2010**

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	312				
Romania	55	0.86	1	0.02	6413821
Slovakia	1				
Total	368		1		6413821

**Figure 6: Number of SARI cases by week of onset, weeks 40/2010–week 49/2010**



**Table 4: Number of SARI cases by age and gender, week 49/2010**

Age groups	Male	Female
Under 2	28	19
2-17	12	11
18-44	2	2
45-59	1	4
>=60	6	1
Total	49	37

**Table 5: Number of SARI cases by influenza type and subtype, week 49/2010**

Virus type/subtype	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A		
A (H1N1) 2009		
A(subtyping not performed)		
A(H3)		
A(H1)		
Influenza B		
Unknown	79	345
Total	86	368

**Table 6: Number of SARI cases by antiviral treatment, week 49/2010**

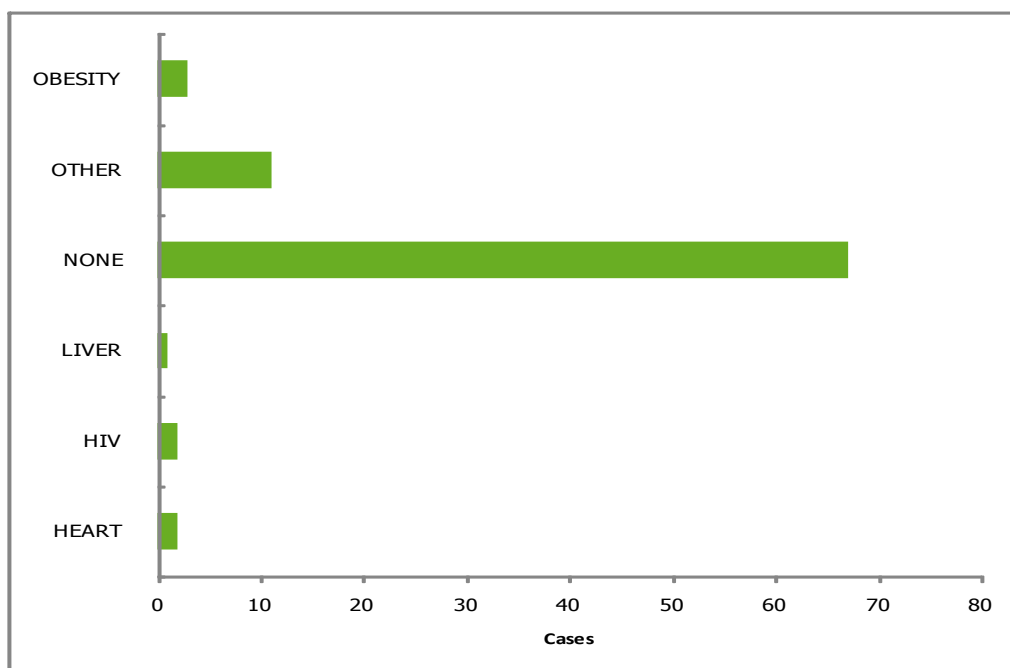
Antiviral treatment	Number of patients who received prophylaxis	Number of patients who received anti-viral treatment
Oseltamivir		1
Unknown	74	74
None	12	11
Total	86	86

**Table 7: Number of SARI cases by level of care and respiratory support, week 49/2010**

Respiratory support	ICU	Inpatient ward	Other	Unknown
No respiratory support necessary	3	3	51	
Oxygen therapy	5	6	11	
Ventilator	3	1	3	

**Table 8: Number of SARI cases by vaccination status, week 49/2010**

Vaccination Status	Number Of Cases	Percentage of cases
Not vaccinated	12	14
Seasonal vaccination	3	4
Unknown	71	82.6
TOTAL	86	

**Figure 7: Number of SARI cases by underlying condition, week 49/2010**

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 9: Number of underlying conditions in SARI cases by age group, week 49/2010**

Underlying condition/risk factor	Infant below 2 years	2-17 years	18-44 years	45-59 years	>=60 years
Chronic heart disease					2
HIV/other immune deficiency				2	
Liver-related condition			1		
No underlying condition	43	20	3	1	
Other (please specify separately)	4	3		1	3
Obesity (BMI between 30 and 40)				1	2

**Table 10: Additional clinical complications in SARI cases by age group, week 49/2010**

Additional clinical complications	Infant below 2 years	2-17 years	18-44 years	45-59 years	>=60 years
Acute respiratory distress syndrome	4	1	1		1
Bronchiolitis	1				
None		1			1
Pneumonia (secondary bacterial infection)			2		
Unknown	42	21	1	5	5

The report text was written by an editorial team at the European Centre for Disease Prevention and Control (ECDC): Eva 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 Snijders (RIVM Bilthoven, The Netherlands) and Thedi Ziegler (National Institute for Health and Welfare, Finland)

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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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