

SURVEILLANCE REPORT

Weekly influenza surveillance overview

23 December 2010

Main surveillance developments in week 50/2010 (13 Dec 2010 – 19 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.

- Twenty-seven countries reported clinical ILI or ARI data in week 50/2010. Eighteen countries reported increasing trends in community consultations. Some countries in the west of the EU (Belgium, Ireland, Portugal and the UK) reported medium influenza intensity. Twenty-five countries experienced influenza activity of low intensity.
- During week 50/2010, 39% of sentinel specimens were positive for influenza indicative of active influenza transmission. Since week 40/2010, of the 2324 influenza detections in sentinel and non-sentinel specimens, 1613 (69%) were influenza A and 71 (31%) were influenza B viruses. Of 872 influenza A viruses sub-typed, 797 (91%) were A(H1N1) 2009 and 75 (9%) were A(H3) viruses. The circulating viruses detected to date have been similar to the current vaccine viruses. This indicates that the annual influenza epidemic is starting in Europe and that at present it is dominated by influenza A(H1N1) 2009 and B viruses.
- During weeks 40–50/2010, a total of 400 SARI cases and severe hospitalised influenza cases were reported by four countries. For the 50 cases that the causative pathogen was reported, SARI was caused by influenza A in 22 (44%) and influenza B in 2 (4%) cases. The first affected country this year, the UK, has experienced many severe cases requiring higher levels of care and some deaths due to influenza in the last four weeks.
- In the light of the above situation, the ECDC Director has issued an [urgent message](#) and an [accompanying briefing for professionals](#).

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI): Twenty-five countries and the UK (Scotland) experienced influenza activity of low intensity. Belgium, Ireland, Portugal and the UK (England and Northern Ireland) reported medium intensity. Eighteen countries reported increasing trends in week 50/2010. For more information, [click here](#).

Virological surveillance: Twenty-five of the 29 countries reported virological data. Sentinel physicians collected 1130 specimens with an increased percentage (39%) testing positive for influenza virus for the fourth consecutive week. For more information, [click here](#).

Hospital surveillance of severe acute respiratory infection (SARI): Since week 40/2010, a total of 400 SARI or severe hospitalised influenza cases have been reported by four countries. For more information, [click here](#).

Sentinel surveillance (ILI/ARI)

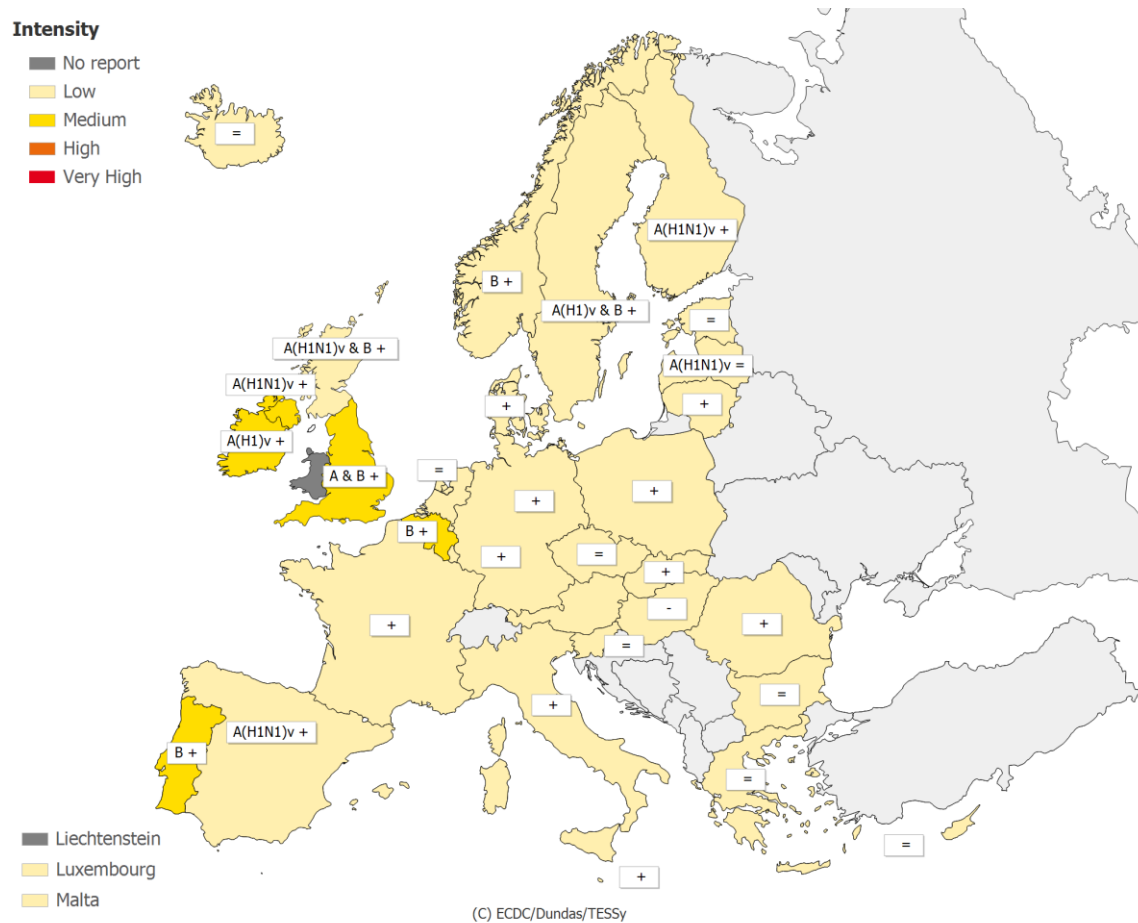
Weekly analysis – epidemiology

All 29 EU/EEA countries reported clinical ILI or ARI data in week 50/2010. Belgium, Ireland, Portugal and the UK (England and Northern Ireland) reported medium intensity and activity above their baselines. Twenty-five countries and the UK (Scotland) experienced influenza activity of low intensity.

Sporadic activity was reported by 12 countries and the UK (Northern Ireland and Scotland). Six countries reported local spread while Finland, France, Italy and Norway reported regional spread. Belgium, Portugal and the UK (England) reported widespread geographic spread. Only four countries (Austria, Bulgaria, Greece and Romania) reported no activity (Table 1, Map 2), which is less than last week (8 countries).

Eighteen countries reported increasing trends in week 50/2010. This week, nine countries reported stable trends while Hungary reported a decreasing trend. (Table 1, Map 2).

Map 1: Intensity for week 50/2010



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

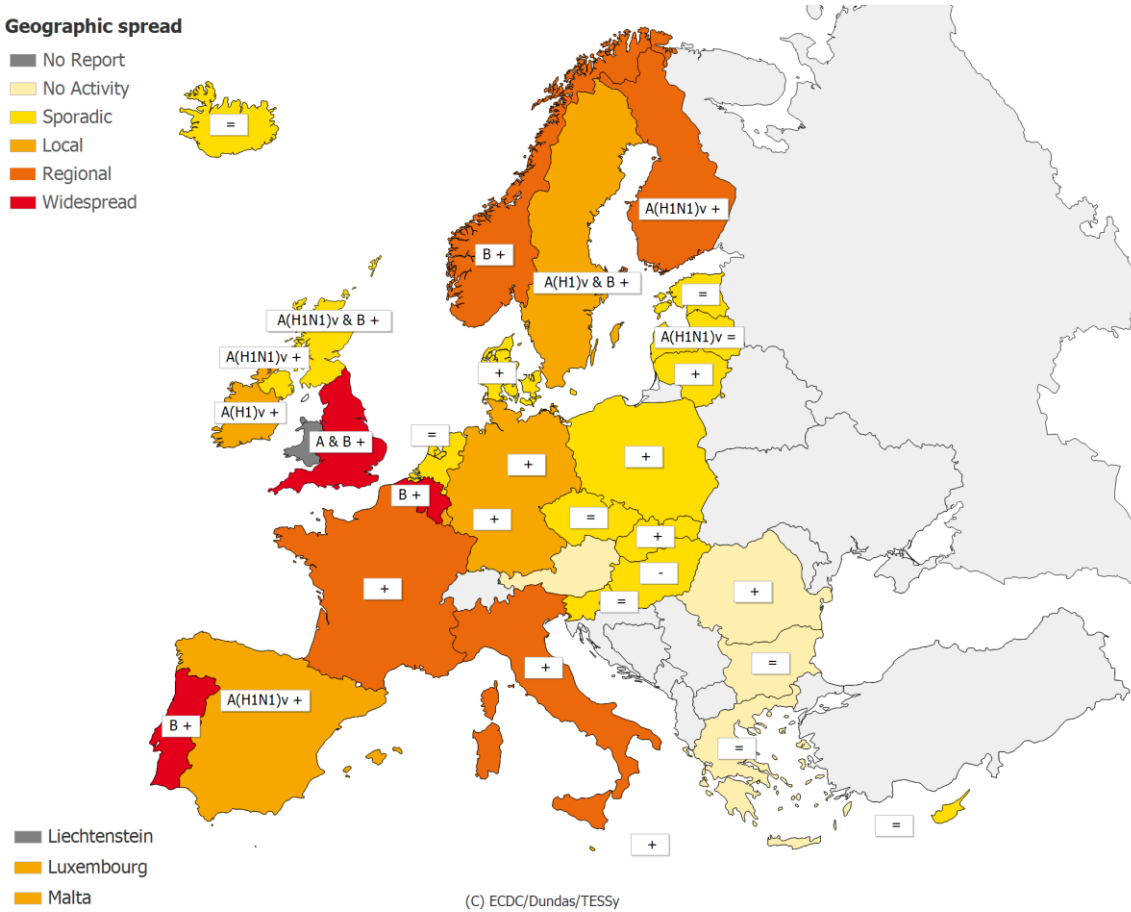
Legend:

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

Map 2: Geographic spread for week 50/2010

Geographic spread

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



- 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 activity	No evidence of influenza virus activity (clinical activity remains at baseline levels)	-	Decreasing clinical activity
Sporadic	Isolated cases of laboratory confirmed influenza infection	+	Increasing 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)	=	Stable clinical activity
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(H1)v	Type A, Subtype H1v
		A(H1)v & B	Type B and Type A, Subtype H1v
		A(H1N1)v	Type A, Subtype H1N1v
		A(H1N1)v & B	Type B and Type A, Subtype H1N1v
		B	Type B

Table 1: Epidemiological and virological overview by country, week 50/2010

Country	Intensity	Geo-graphic spread	Trend	No. of sentinel specimens	Dominant type	Percentage positive*	ILI per 100.000	ARI per 100.000	Epi-demiological overview	Viro-logical overview
Austria	Low	No activity	Unknown (no information available)	13	None	0.0	-	27.7	Graphs	Graphs
Belgium	Medium	Widespread	Increasing	39	B	61.5	158.2	1836.2	Graphs	Graphs
Bulgaria	Low	No activity	Stable	4	None	50.0	-	946.7	Graphs	Graphs
Cyprus	Low	Sporadic	Stable	-	-	0.0	.*	.*	Graphs	Graphs
Czech Republic	Low	Sporadic	Stable	-	-	0.0	35.3	1036.3	Graphs	Graphs
Denmark	Low	Sporadic	Increasing	13	None	30.8	96.9	-	Graphs	Graphs
Estonia	Low	Sporadic	Stable	12	None	16.7	5.8	316.8	Graphs	Graphs
Finland	Low	Regional	Increasing	101	A(H1)2009	60.4	-	-	Graphs	Graphs
France	Low	Regional	Increasing	96	None	17.7	-	2162.8	Graphs	Graphs
Germany	Low	Local	Increasing	42	None	28.6	-	1102.7	Graphs	Graphs
Greece	Low	No activity	Stable	1	None	0.0	35.8	-	Graphs	Graphs
Hungary	Low	Sporadic	Decreasing	55	None	1.8	103.3	-	Graphs	Graphs
Iceland	Low	Sporadic	Stable	4	-	25.0	0.9	-	Graphs	Graphs
Ireland	Medium	Local	Increasing	24	A(H1)2009	29.2	24.1	-	Graphs	Graphs
Italy	Low	Regional	Increasing	34	None	23.5	205.3	-	Graphs	Graphs
Latvia	Low	Sporadic	Stable	0	A(H1)2009	0.0	1.8	967.2	Graphs	Graphs
Lithuania	Low	Sporadic	Increasing	-	-	0.0	3.3	549.6	Graphs	Graphs
Luxembourg	Low	Local	Increasing	18	-	38.9	.*	.*	Graphs	Graphs
Malta	Low	Local	Increasing	-	-	0.0	.*	.*	Graphs	Graphs
Netherlands	Low	Sporadic	Stable	17	None	70.6	35.6	-	Graphs	Graphs
Norway	Low	Regional	Increasing	17	B	70.6	51.0	-	Graphs	Graphs
Poland	Low	Sporadic	Increasing	21	None	0.0	68.7	-	Graphs	Graphs
Portugal	Medium	Widespread	Increasing	7	B	57.1	45.4	-	Graphs	Graphs
Romania	Low	No activity	Increasing	41	None	0.0	12.3	841.2	Graphs	Graphs
Slovakia	Low	Sporadic	Increasing	12	None	8.3	213.5	1905.5	Graphs	Graphs
Slovenia	Low	Sporadic	Stable	14	None	7.1	1.4	1164.4	Graphs	Graphs
Spain	Low	Local	Increasing	132	A(H1)2009	28.0	40.0	-	Graphs	Graphs
Sweden	Low	Local	Increasing	-	BA(H1)2009	0.0	6.2	-	Graphs	Graphs
UK – England	Medium	Widespread	Increasing	365	AB	57.5	87.1	826.3	Graphs	Graphs
UK – Northern Ireland	Medium	Sporadic	Increasing	17	A(H1)2009	58.8	64.6	513.0	Graphs	Graphs
UK – Scotland	Low	Sporadic	Increasing	31	BA(H1)2009	38.7	2.1	270.9	Graphs	Graphs
UK – Wales				-	-	0.0	-	-		
Europe				1130		39.4				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

Malta: Situation is stable.

UK (England): All flu indicators continue to increase in the UK. GP consultation rates are still increasing as are calls to NHS Direct (nurse-led medical helpline) for flu-related illnesses. More outbreaks of influenza A(H1N1) 2009 and influenza B have been reported, indicating community transmission of influenza virus. 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 aged under 65 years. Further information can be found on the Health Protection Agency website (new report will be published Thursday afternoon):

<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SeasonalInfluenza/EpidemiologicalData/02influswe eklyreport/>

UK (Scotland): Five additional individuals were hospitalised (ICU) with influenza A(H1N1) 2009.

Description of the system

This 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) 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 50/2010, 25 of the 29 countries reported virological data.

Sentinel physicians collected 1130 specimens with an increased percentage (39%) testing positive for influenza virus for the fourth consecutive week (Tables 1 and 2, Figure 3). Of the nine countries who tested more than 30 specimens in week 50/2010, Belgium, Finland, France, Germany, Italy, Spain, and the UK (England and Scotland) reported 62, 60, 18, 29, 24, 28, 58, and 39% positivity rates, respectively, whereas rates in Hungary (1.8%) and Romania (0%) are indicative of later starts to their influenza seasons (Table 1).

In addition to the influenza positive sentinel specimens, 780 non-sentinel source specimens (i.e. specimens collected for diagnostic purpose in hospitals) tested positive for influenza virus.

Of the 1225 influenza viruses detected in sentinel and non-sentinel samples during week 50/2010, 910 (74%) were type A and 315 (26%) were type B. The dominant virus types varied between countries: Belgium, Norway, and Portugal reported predominantly influenza B virus; Finland, Ireland, Latvia, Spain, and the UK (Northern Ireland) reported A(H1)2009; Sweden and the UK (Scotland) a mixture of these two viruses; and the UK (England) a mixture of influenza A and B viruses (Table 1). Of the 286 sentinel influenza A viruses that were sub-typed, 279 (98%) were A(H1)2009 and 7 (2%) were A(H3) viruses (Table 2).

Of the 2324 influenza detections in sentinel and non-sentinel specimens since week 40/2010, 1613 (69%) were influenza A, and 711 (31%) influenza B viruses. Of 872 influenza A viruses sub-typed, 797 (91%) were A(H1)2009, and 75 (9%) A(H3) viruses (Table 2). Trends of virological detections since week 40/2010 are shown in Figures 1–3.

Since week 40/2010, 159 influenza viruses from sentinel and non-sentinel specimens have been characterised antigenically (Figure 4): 88 (55%) as A/California/7/2009 (H1N1)-like; 15 (9%) as A/Perth/16/2009 (H3N2)-like; 51 (32%) as B/Brisbane/60/2008-like (Victoria lineage); and 5 (2%) 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. The next CNRL virological report will be published in January 2011.

In week 50/2010, respiratory syncytial virus (RSV) detections were reported by 15 countries. The numbers of RSV detections continued to increase since week 40/2010 (Figure 5).

Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2010 – 50/2010

Virus type/subtype	Current period		Season	
	Sentinel	Non-sentinel	Sentinel	Non-sentinel
Influenza A	310	600	580	1033
A (H1)2009	279	145	502	295
A (subtyping not performed)	24	453	35	706
A (not subtypable)	0	0	0	0
A (H3)	7	2	43	32
A(H1)seasonal	0	0	0	0
Influenza B	135	180	308	403
Total influenza	445	780	888	1436

Note: A(H1)2009, A(H3) and A(H1) seasonal include both N-subtyped and non-N-subtyped viruses.

Figure 1: Number of sentinel specimens positive for influenza, by type, subtype, and week of report, weeks 40/2010 – 50/2010

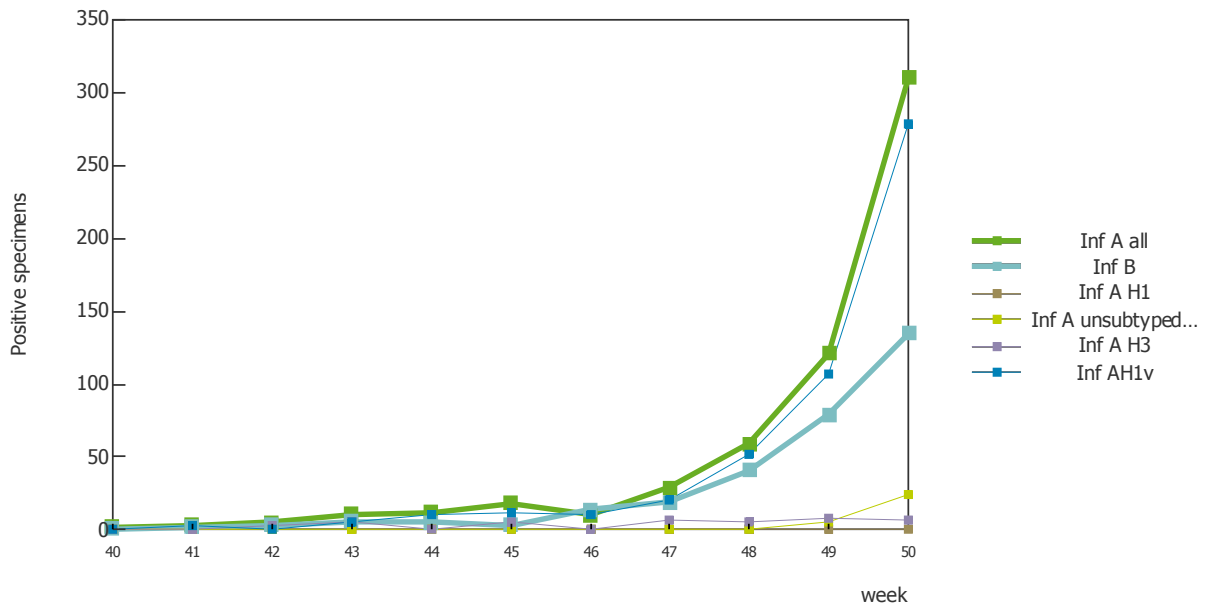


Figure 2: Number of non-sentinel specimens positive for influenza by type, subtype, and week of report, weeks 40/2010 – 50/2010

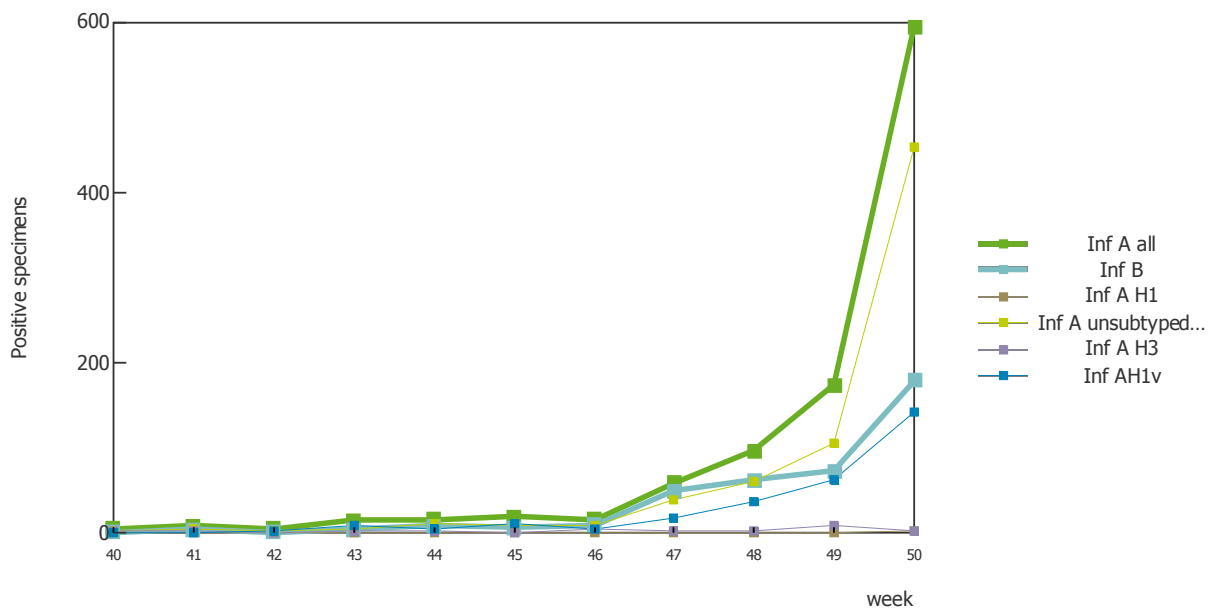


Figure 3: Proportion of sentinel samples positive for influenza, weeks 40/2010 – 50/2010

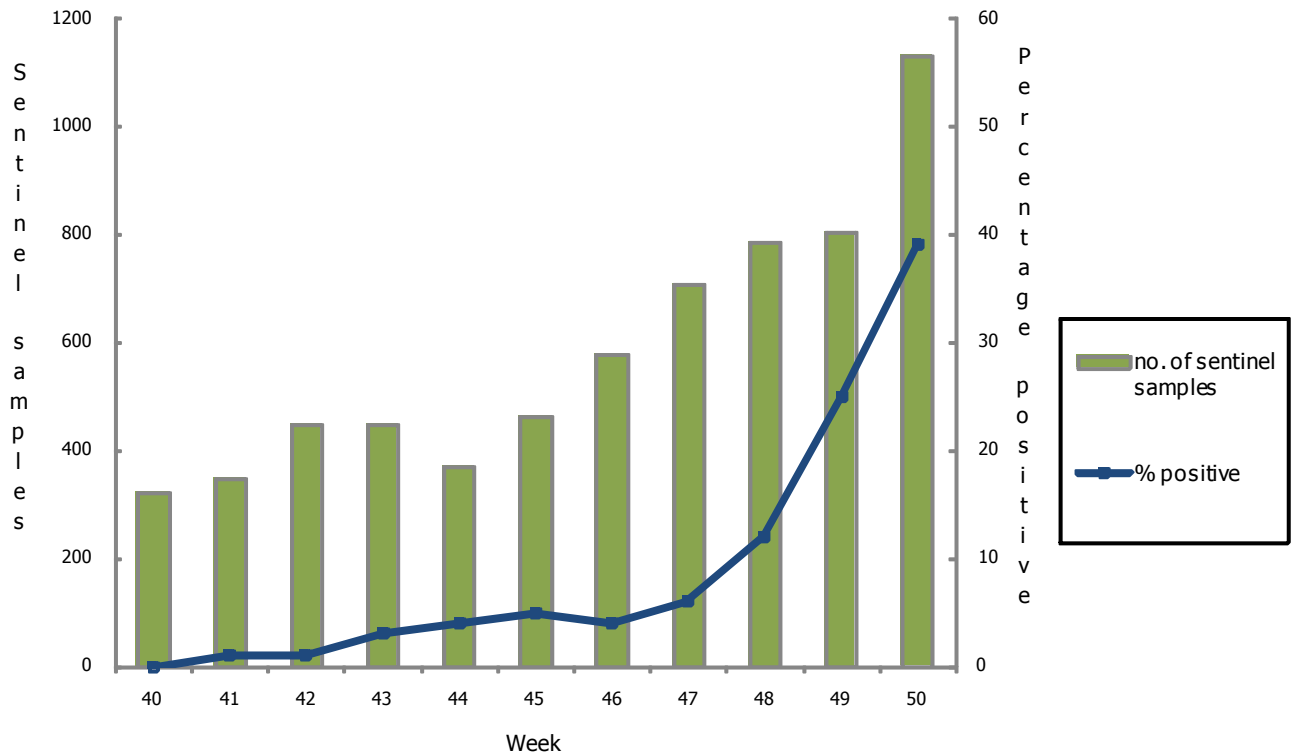


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40/2010 – 50/2010

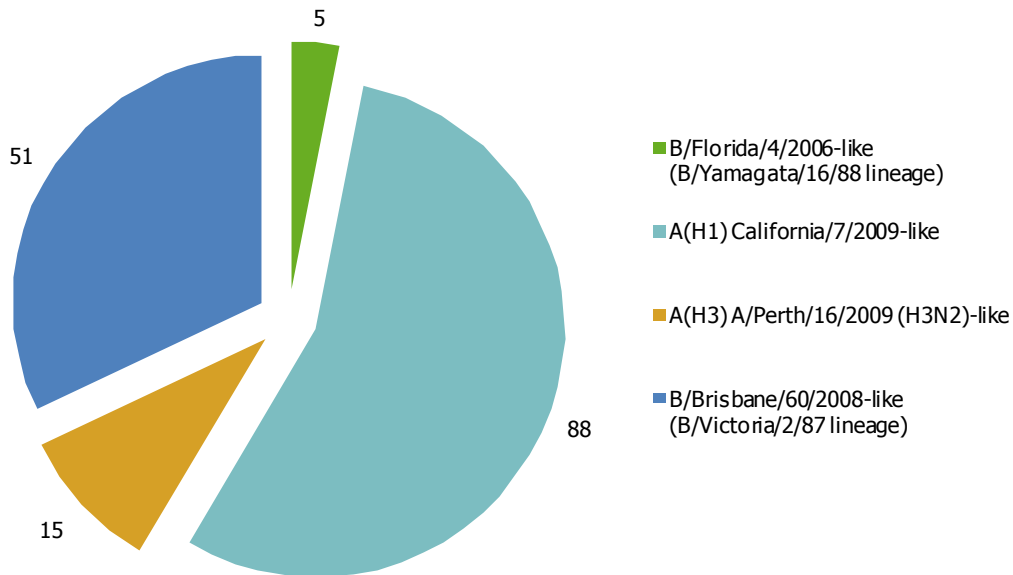
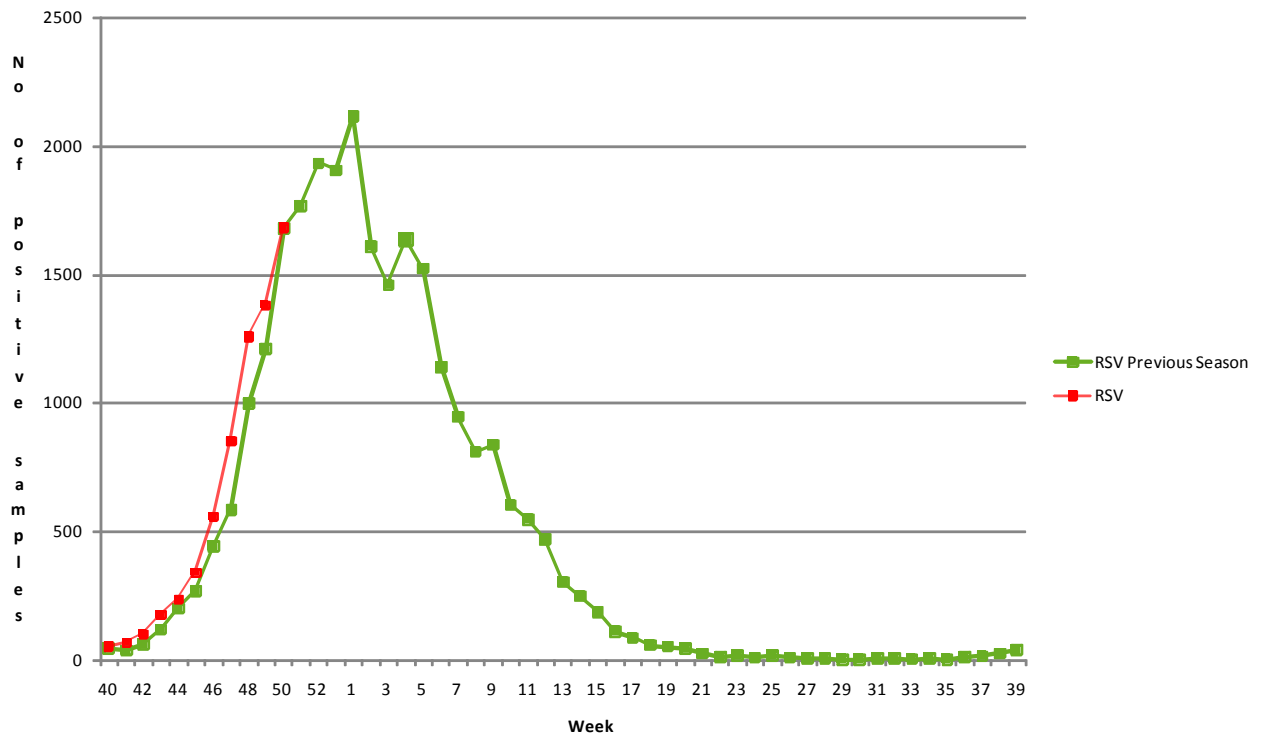


Figure 5: Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2010 – 50/2010



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

In week 50/2010, Spain has started to report severe hospitalised confirmed influenza cases. This data is included in the tables and figures below.

During weeks 40–50/2010, a total of 400 SARI cases and severe hospitalised influenza cases were reported to TESSy by Belgium, Romania, Slovakia and Spain (Table 3). Three cases have been fatal (Table 3). In week 50/2010, 16 SARI cases were reported, three of which had symptom onset during week 50/2010 (Figure 6). The gender ratio (male/female) was 2.2 (Table 4). Of the 50 SARI cases for which the causative pathogen was reported, influenza A was found in 22 (44%) – 15 being influenza A(H1N1) 2009 and 1 A(H3N2) - and influenza B in 2(4%). Amongst the other 26 cases, RSV or mixed RSV and bacterial infection was found in 17 (65%) individuals (Table 5).

Eight were admitted to an intensive care unit and four of those cases needed respiratory support (Table 7). The vaccination status of 11 patients was known and only one of them had been vaccinated (Table 8). Three of the SARI cases reported this week had no underlying conditions (Figure 6). The age distribution of the SARI cases was variable (Table 9).

In addition the UK is experiencing numbers of severe cases in its hospitals in England with around 300 cases [requiring higher levels of care](#) and [some deaths](#).

Table 3: Cumulative number of SARI cases, weeks 40/2009 – 50/2010

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	63	0.98	1	0.02	6413821
Slovakia	2				
Spain	23		2		
Total	400		3		6413821

Figure 6: Number of SARI cases by week of onset, weeks 40/2009 – 50/2010

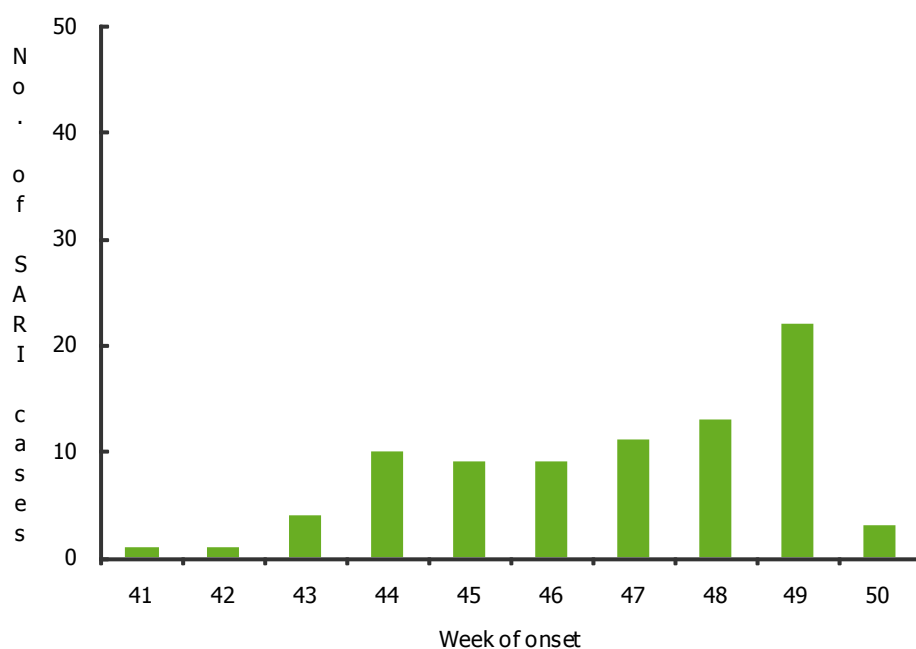


Table 4: Number of SARI cases by age and gender, week 50/2010

Age groups	Male	Female
Under 2	2	
2-17	3	
18-44	3	3
45-59		2
>=60	3	
Total	11	5

Table 5: Number of SARI cases by causative pathogen, week 50/2010

Virus type/subtype	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	7	22
A(H1)2009	5	15
A(subtyping not performed)	2	6
A(H3)		1
A(H1)seasonal		
Influenza B	1	2
Unknown	5	350
Other*	3	26
Total	16	400

* Other: Includes cases with RSV, parainfluenza virus 3, H.Influenzae, H. parainfluenzae and Str. Pneumoniae.
 Note: A(H1)2009, A(H3) and A(H1) seasonal include both N-subtyped and non-N-subtyped viruses.

Table 6: Number of SARI cases by antiviral treatment, week 50/2010

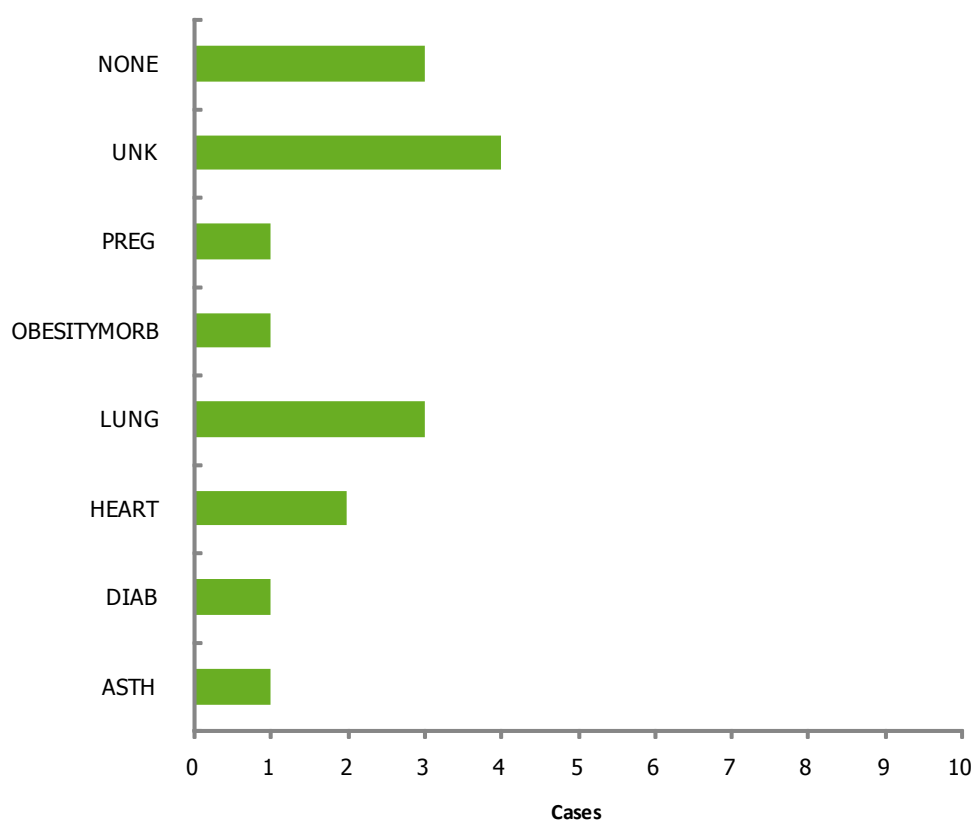
Antiviral treatment	Number of patients who received prophylaxis	Number of patients who received anti-viral treatment
Osetamivir	1	8
Unknown	7	
None	8	8
Total	16	16

Table 7: Number of SARI cases by level of care and respiratory support, week 50/2010

Respiratory support	ICU	Inpatient ward	Other	Unknown
No respiratory support necessary		2		
Oxygen therapy	2	2		
Respiratory support given unknown	4		3	1
Ventilator	2			

Table 8: Number of SARI cases by vaccination status, week 50/2010

Vaccination Status	Number Of Cases	Percentage of cases
Not vaccinated	10	62.5
Seasonal vaccination	1	6
Unknown	5	31.3
TOTAL	16	

Figure 7: Number of SARI cases by underlying condition, week 50/2010

Note: Data are 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 50/2010

Underlying condition/risk factor	Infant below 2 years	2-17 years	18-44 years	45-59 years	>=60 years
Asthma			1		
Diabetes					1
Chronic heart disease				1	1
Chronic lung disease		1	1	1	
No underlying condition	1	2			
Morbid obesity (BMI above 40)			1		
Pregnancy			1		
Underlying condition unknown	1		2		1

Table 10: Additional clinical complications in SARI cases by age group, week 50/2010

Additional clinical complications	Infant below 2 years	2-17 years	18-44 years	45-59 years	>=60 years
Acute respiratory distress syndrome	1	3	1	1	2
Bronchiolitis				1	
None					1
Other (please specify separately)			1		
Pneumonia (secondary bacterial infection)			3		
Unknown	1		1		

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 Srijders (RIVM Bilthoven, 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 related to 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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