

SURVEILLANCE REPORT

Weekly influenza surveillance overview

29 January 2010

Main surveillance developments in week 03/2010 (18 Jan 2010 – 24 Jan 2010)

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

- Medium ILI/ARI activity was reported in five countries and an increasing trend only in Poland and Slovakia. Widespread geographic activity was only reported in Greece and the UK (Wales).
- Of the 840 swabs performed by sentinel physicians, 15% were found positive for influenza A virus.
- Since week 40/2009, 99% of sub-typed specimens were identified as the pandemic virus. Among the tested specimens, 2.7% were resistant to oseltamivir.
- The number of SARI cases continued to decline. Fifty-two percent of new cases were admitted to intensive care units (ICU) and 37% needed ventilator support.

Sentinel surveillance of influenza like-illness (ILI)/ acute respiratory illness (ARI): Of the 26 countries reporting epidemiological data, only five reported medium ILI/ARI activity (Bulgaria, Malta, Poland, Romania and Slovakia) while all remaining countries reported low activity. For more information, [click here](#).

Virological surveillance: In week 03/2010, sentinel physicians collected 840 respiratory specimens, of which 126 (15%) were positive for influenza A virus. Since week 40/2009, 99% of the sentinel specimens tested were characterized as the 2009 pandemic influenza A(H1N1) virus. The total number of influenza as well as respiratory syncytial virus (RSV) detections continued to decrease during week 03/2010. For more information, [click here](#).

Aggregate numbers of 2009 pandemic influenza (H1N1) deaths: In week 03/2010, nine countries reported 91 additional deaths. For more information, [click here](#).

Hospital surveillance of severe acute respiratory infection (SARI): During week 03/2010, 86 SARI cases were reported and of the 70 influenza viruses detected and sub-typed, all were the pandemic virus. For more information, [click here](#).

Qualitative reporting: For more information [click here](#).

Sentinel surveillance (ILI/ARI)

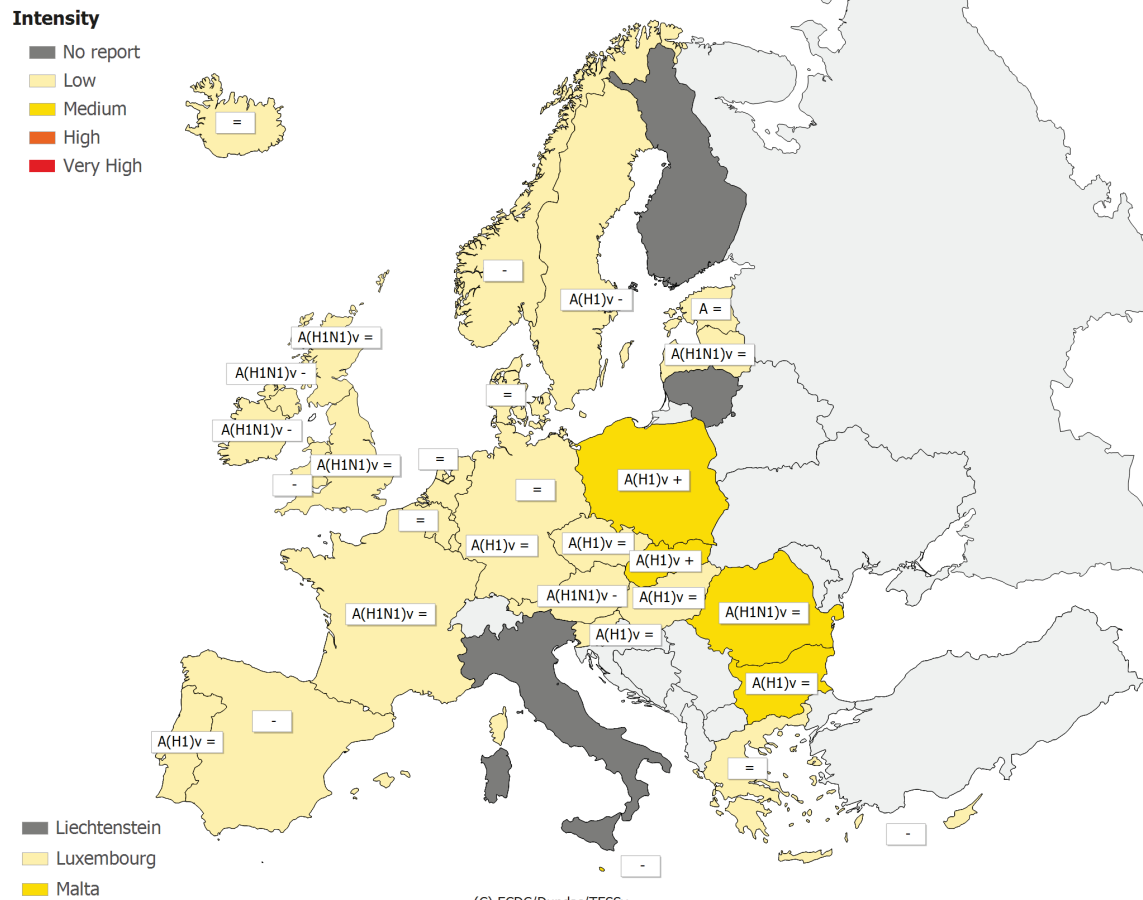
Weekly analysis – epidemiology

In week 03/2010, 26 of 29 countries reported epidemiological data. For the activity intensity indicator, five countries reported medium activity (Bulgaria, Malta, Poland, Romania and Slovakia) while all other remaining countries reported low intensity (Map 1, Table 1).

Of the five countries that reported intensity above baseline levels, an increasing trend was reported in Poland and Slovakia, a stable trend reported in Bulgaria and Romania, and a decreasing trend in Malta.

For the geographic spread indicator, widespread activity was reported in Greece and in the UK (Wales), and local or regional activity was reported in Austria, Bulgaria, Czech Republic, Estonia, France, Germany, Malta, Romania, Slovakia, Sweden and the UK (Scotland). Sporadic or no activity was reported in the remaining 14 countries and the UK (England and Northern Ireland).

Map 1: Intensity for week 03/2010

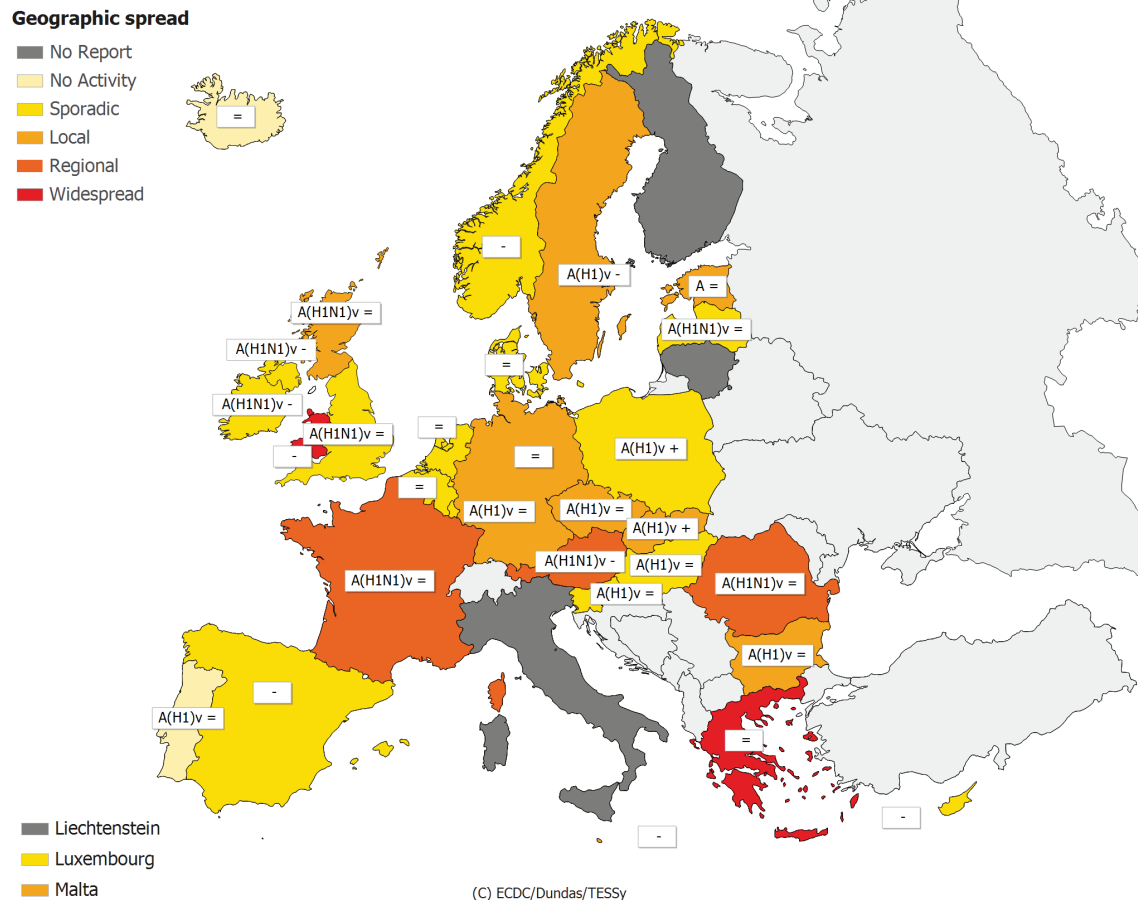


* A type/subtype is reported as dominant when > 40 % of all samples are positive for the type/subtype.

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	Type A
		A(H1)v	Type A, Subtype H1v
		A(H1N1)v	Type A, Subtype H1N1v

Map 2: Geographic spread for week 03/2010



* A type/subtype is reported as dominant when > 40 % of all samples 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	Type A
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(H1N1)v	Type A, Subtype H1N1v

Table 1: Epidemiological and virological overview by country

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	Regional	Decreasing	12	A(H1N1)v	25.0	-	13.2	Graphs	Graphs
Belgium	Low	Sporadic	Stable	-	-	-	74.2	1519.7	Graphs	Graphs
Bulgaria	Medium	Local	Stable	69	A(H1)v	26.1	-	932.4	Graphs	Graphs
Cyprus	Low	Sporadic	Decreasing	-	-	-	388.8	11879.0	Graphs	Graphs
Czech Republic	Low	Local	Stable	20	A(H1)v	30.0	46.0	808.7	Graphs	Graphs
Denmark	Low	Sporadic	Stable	13	None	46.2	41.3	0.0	Graphs	Graphs
Estonia	Low	Local	Stable	15	A	26.7	10.7	244.7	Graphs	Graphs
Finland				-	-	-	-	-	Graphs	Graphs
France	Low	Regional	Stable	167	A(H1N1)v	9.0	-	1682.3	Graphs	Graphs
Germany	Low	Local	Stable	-	-	-	-	1085.5	Graphs	Graphs
Greece	Low	Widespread	Stable	20	None	50.0	100.7	-	Graphs	Graphs
Hungary	Low	Sporadic	Stable	52	A(H1)v	17.3	143.0	-	Graphs	Graphs
Iceland	Low	No activity	Stable	-	-	-	2.8	-	Graphs	Graphs
Ireland	Low	Sporadic	Decreasing	11	A(H1N1)v	9.1	12.2	-	Graphs	Graphs
Italy				-	-	-	-	-	Graphs	Graphs
Latvia	Low	Sporadic	Stable	0	A(H1N1)v	-	0.9	867.0	Graphs	Graphs
Lithuania				1	None	0.0	-	-	Graphs	Graphs
Luxembourg	Low	Sporadic	Stable	22	A(H1)v	31.8	1136.4	24837.7	Graphs	Graphs
Malta	Medium	Local	Decreasing	-	-	-	10589.2	-	Graphs	Graphs
Netherlands	Low	Sporadic	Stable	12	None	8.3	34.2	-	Graphs	Graphs
Norway	Low	Sporadic	Decreasing	3	None	0.0	37.4	-	Graphs	Graphs
Poland	Medium	Sporadic	Increasing	26	A(H1)v	0.0	-	-	Graphs	Graphs
Portugal	Low	No activity	Stable	4	A(H1)v	0.0	6.8	-	Graphs	Graphs
Romania	Medium	Regional	Stable	77	A(H1N1)v	26.0	3.8	820.8	Graphs	Graphs
Slovakia	Medium	Local	Increasing	2	A(H1)v	0.0	157.2	1314.1	Graphs	Graphs
Slovenia	Low	Sporadic	Stable	10	A(H1)v	30.0	8.2	996.0	Graphs	Graphs
Spain	Low	Sporadic	Decreasing	88	None	1.1	21.4	-	Graphs	Graphs
Sweden	Low	Local	Decreasing	8	A(H1)v	0.0	1.3	-	Graphs	Graphs
UK - England	Low	Sporadic	Stable	135	A(H1N1)v	16.7	12.8	366.1	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Decreasing	0	A(H1N1)v	-	23.2	385.7	Graphs	Graphs
UK - Scotland	Low	Local	Stable	73	A(H1N1)v	12.3	8.1	243.3	Graphs	Graphs
UK - Wales	Low	Widespread	Decreasing	-	-	-	4.8	-	Graphs	Graphs
Europe				840		15.0			Graphs	Graphs

Note: Liechtenstein is not reporting to the European Influenza Surveillance Network

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 03/2010, 22 countries reported virological data. Sentinel physicians collected 840 specimens, of which 126 (15%) were positive for influenza virus (Tables 1 and 2). In addition, 706 non-sentinel source specimens (i.e. specimens collected for diagnostic purpose in hospitals) were reported positive for influenza virus. Of the 16 698 influenza viruses detected by sentinel practices and sub-typed since week 40 in 2009, 16 538 (99%) were identified as the 2009 pandemic influenza A(H1N1) virus. Table 2 shows the distribution of both sentinel and non-sentinel specimens by type and sub-type. Figures 2–4 show the trends over time of virological detections.

Based on the antigenic characterisation of 1405 influenza viruses reported from week 40/2009 to week 03/2010, 1395 (99.6%) were characterised as A/California/7/2009 (H1N1)v-like, four as A/Perth/16/2009(H3N2)-like, five as A/Brisbane/10/2007(H3N2)-like and one as B/Brisbane/60/2008-like. Figure 4 shows the results of the antigenic characterisation of sentinel and non-sentinel influenza virus isolates since week 40/2009.

All pandemic viruses tested have been found resistant to M2 inhibitors. Of 1280 isolates tested from eight countries, 35 (2.7%) were resistant to oseltamivir and of 1274 tested isolates none was resistant to zanamivir.

Since the peak of RSV in week 01, the total number of respiratory syncytial virus (RSV) detections in 8 countries has continued to decrease (Figure 5).

Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2009–03/2010

Virus type/subtype	Current Week		Season	
	Sentinel	Non-sentinel	Sentinel	Non-sentinel
Influenza A	116	693	17288	87266
A (pandemic H1N1)	106	556	16538	74866
A (subtyping not performed)	4	135	648	12009
A (not subtypable)	6	2	61	306
A (H3)	0	0	6	36
A (H1)	0	0	35	49
Influenza B	6	6	58	86
Total Influenza	126	706	17346	87352

Note: A(pandemic H1N1, A(H3) and A(H1) includes both N-subtyped and not N-subtyped viruses

Figure 1: Number of sentinel specimens positive for influenza, by type, subtype and by week of report, weeks 40/2009–03/2010

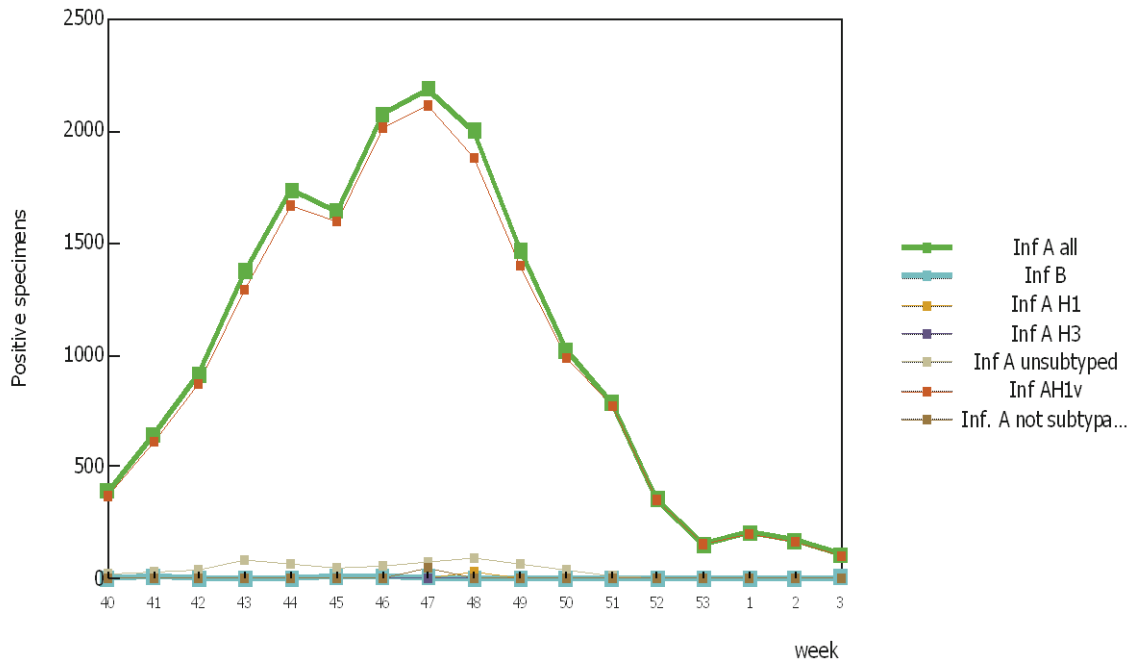


Figure 2: Number of non-sentinel specimens positive for influenza by type, subtype and week of report, weeks 40/2009–03/2010

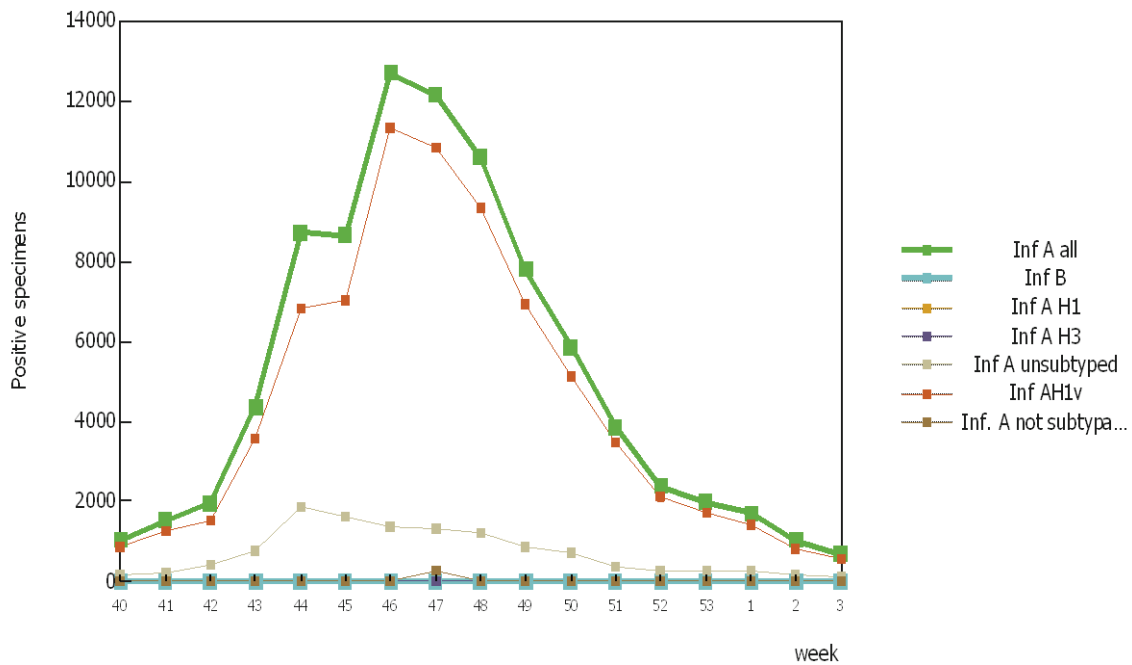


Figure 3: Proportion of sentinel samples positive for influenza, weeks 40/2009–03/2010

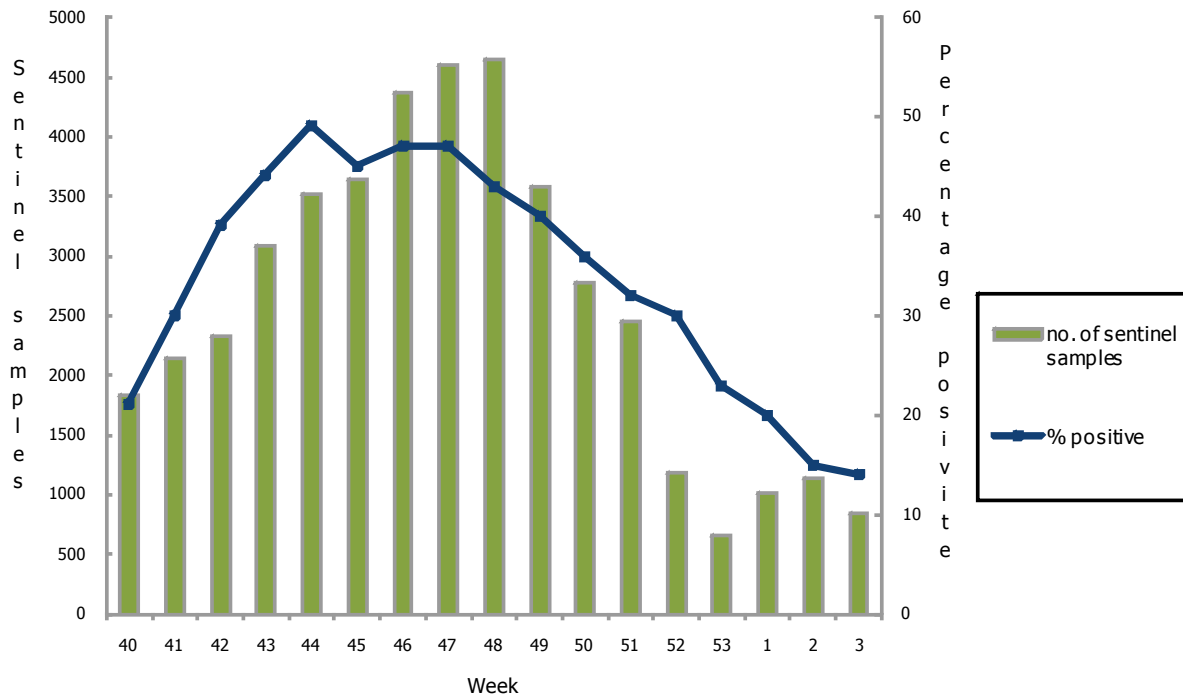


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates since week 40/2009

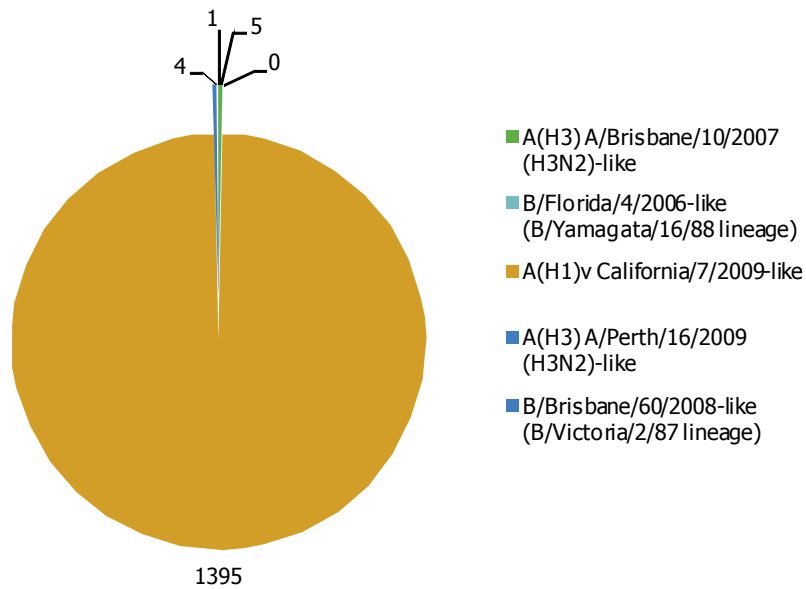
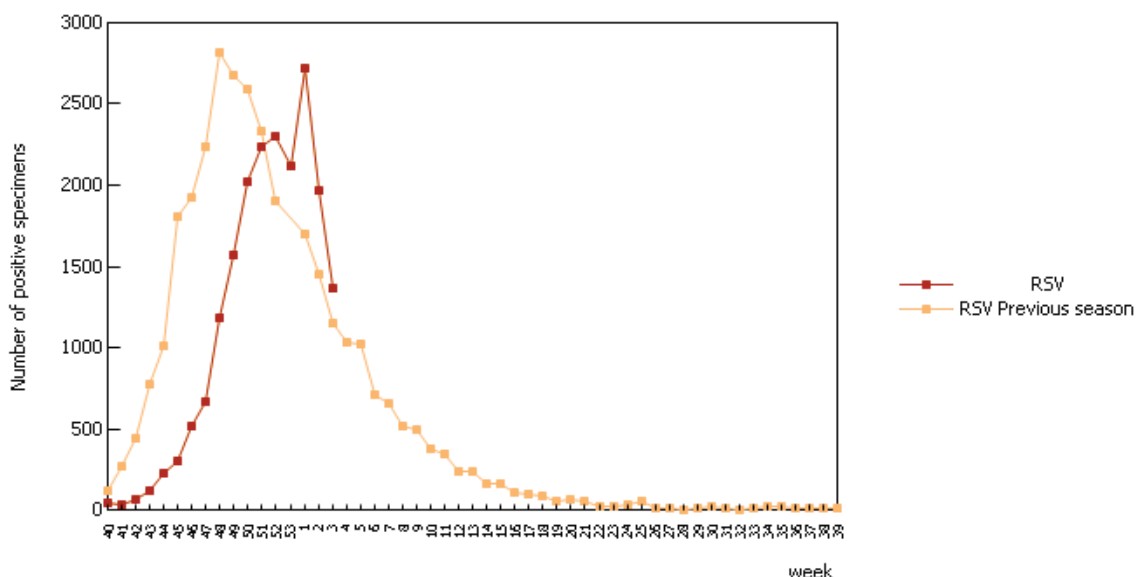


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2009–03/2010

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	
A(H1N1)	0		0		0	
A(H1N1)v	1280	35 (2.7%)	1274	0 (0%)	153	153 (100%)
B	0		0		na	na

Na = not applicable

Figure 5: Respiratory syncytial viruses (RSV) detections (sentinel and non-sentinel, weeks 40/2009–03/2010)



Comments on virological data provided by countries in week 03/2010

By week 04/2010 in the Netherlands, 17 patients were diagnosed with oseltamivir resistant pandemic A(H1N1) 2009 influenza virus. In all but one, oseltamivir resistance emerged during oseltamivir therapy. Thirteen patients receiving oseltamivir therapy were immunosuppressed due to cytostatic/immunosuppressive therapy, of which five died. One patient with 100% oseltamivir resistant virus population did not receive oseltamivir. Contact tracing identified no cases of onward transmission of the oseltamivir resistant viruses.

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.

Aggregate numbers of pandemic (H1N1) 2009 deaths

Weekly analysis — deaths

In week 03/2010, nine countries reported 91 additional deaths. Since the beginning of the pandemic, 1429 deaths have been notified.

Table 4: Aggregate numbers of pandemic (H1N1) 2009 deaths, week 3/2010

country	Deaths reported in week	Cumulative deaths since start of season	Last reported week
Austria		0	2009-w36
Belgium		0	2009-w29
Bulgaria		40	2009-w53
Cyprus		0	2009-w29
Czech Republic	8	91	2010-w03
Denmark		0	2009-w36
Estonia	1	14	2010-w03
Finland		0	2009-w36
France	5	275	2010-w03
Germany	1	199	2010-w03
Greece	8	106	2010-w03
Hungary	13	107	2010-w03
Iceland		2	2009-w52
Ireland	0	22	2010-w03
Italy		1	2009-w52
Latvia		31	2009-w53
Lithuania	2	21	2010-w03
Luxembourg		3	2009-w52
Malta		5	2010-w02
Netherlands	0	56	2010-w03
Norway		29	2010-w01
Poland		9	2009-w47
Portugal		0	2009-w36
Romania	6	110	2010-w03
Slovakia	47	47	2010-w03
Slovenia	0	19	2010-w03
Spain		4	2009-w29
Sweden	0	23	2010-w03
United Kingdom		215	2010-w01
Total	91	1429	

Description of the system

Aggregate numbers of both probable and laboratory-confirmed cases of pandemic influenza and deaths due to pandemic influenza are reported by countries still collecting this data. As countries are retrospectively updating their weekly numbers of deaths and the system calculates the cumulative values based on the current status, weekly numbers of deaths published in previous WISO editions may not always add up to the cumulative totals.

Hospital surveillance – severe acute respiratory infection (SARI)

Weekly analysis – SARI

During week 03/2010, 86 SARI cases were reported, of which 28 (32.6%) had onset of symptoms during the same week. The number of cases by week of onset has been declining since the peak week 46/2009 (Figure 6). Since the beginning of the SARI surveillance, 11 countries have reported 10 558 cases, including 473 fatalities (Table 5).

Of the 70 influenza viruses isolated from the SARI cases and sub-typed, all were the 2009 pandemic influenza A(H1N1) virus (Table 7). Of the 86 SARI cases, 45 (52%) were known to have required intensive care unit (ICU) admission and 32 (37%) needed ventilatory support (Table 9). Detailed information on SARI cases reported during week 03 can be found in Tables 6–12

Table 5: Cumulative number of SARI cases, weeks 40/2009 - week 3/2010

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
Austria	2794		33		
Belgium	1634	15.32			10668666
Cyprus	20		5		
Finland	1390		41		
France	1271		260		
United Kingdom	1360	3.44	52	0.13	39503332
Ireland	888		17		
Malta	133	32.16	1	0.24	413609
Netherlands	628	3.80	27	0.16	16521505
Romania	171	1.35	11	0.09	12684180
Slovakia	269		26		
Total	10558		473		79791292

Figure 6: Number of SARI cases by week of onset, week 3/2010

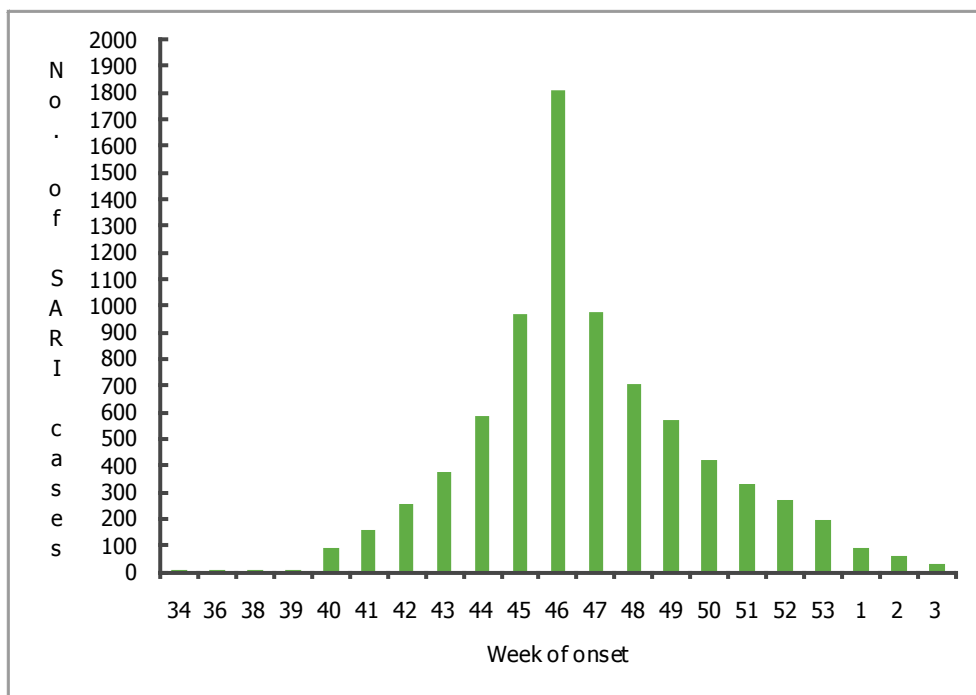


Table 6: Number of SARI cases by age and gender, week 3/2010

Age groups	Male	Female	Other (e.g., transsexual)	Unknown
Under 2	6	2		
2-17	5	7		1
18-44	14	12		
45-59	10	6		
>=60	13	10		
Total	48	37		1

Table 7: Number of SARI cases by influenza type and subtype, week 3/2010

Virus type/subtype	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	71	8553
A (pandemic H1N1)	70	8499
A(subtyping not performed)	1	26
A(H3)		
A(H1)		28
A(H5)		
Influenza B		
Unknown	15	2005
Total	86	10558

Table 8: Number of SARI cases by antiviral treatment, week 3/2010

Antiviral treatment	Number of patients who received prophylaxis	Number of patients who received anti-viral treatment
Oseltamivir	2	15
Other (or any other combination)		1
Unknown	71	64
None	13	6
Total	86	86

Table 9: Number of SARI cases by level of care and respiratory support, week 3/2010

Respiratory support	ICU	Inpatient ward	Other	Unknown
Oxygen therapy	7	9		
Ventilator	29			3
Respiratory support given unknown	9	5		21
No respiratory support necessary			3	

Table 10: Number of SARI cases by vaccination status, week 3/2010

Vaccination Status	Number Of Cases	Percentage of cases
Both, seasonal and pandemic vaccination	1	1.2
Not full pandemic vaccination	0	0
Not vaccinated	14	16.3
Seasonal vaccination	8	9
Unknown	63	73.3
TOTAL	86	

Figure 7: Number of SARI cases by underlying condition, week 3/2010

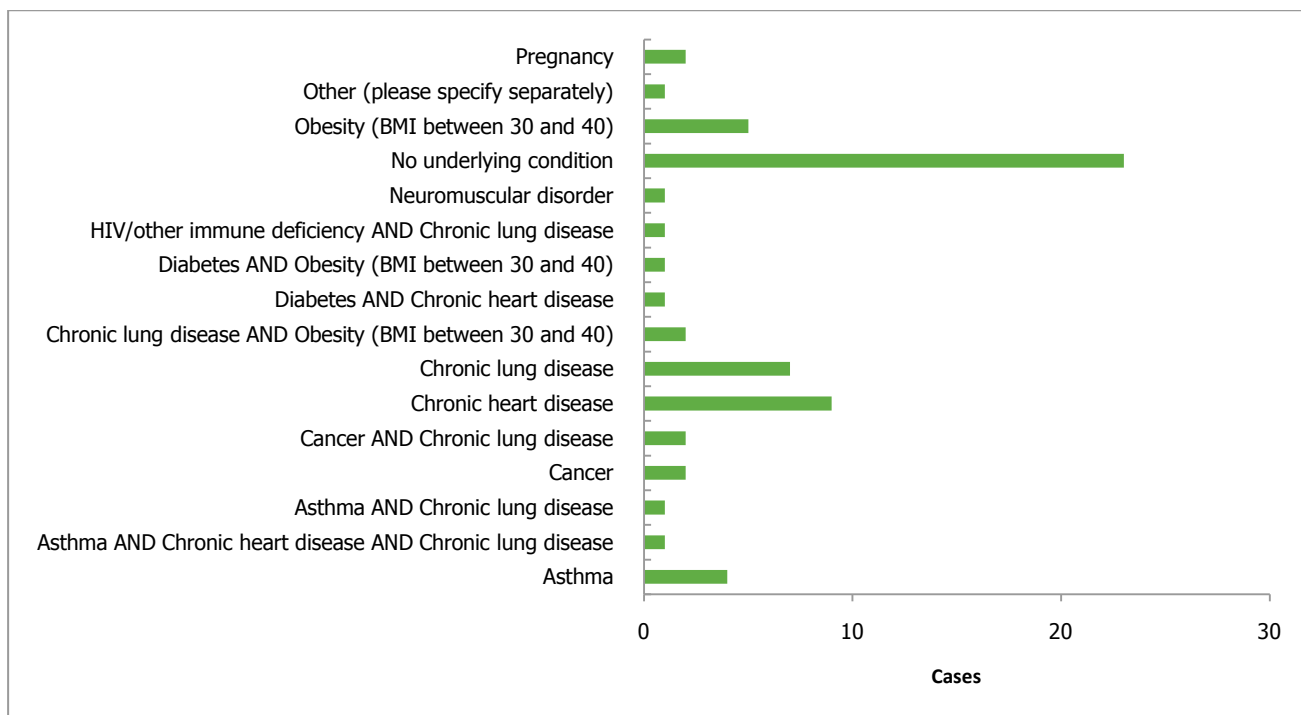


Table 11: Number of underlying conditions in SARI cases by age group, week 3/2010

Underlying condition/risk factor	Infant below 2 years	2-17 years	18-44 years	45-59 years	>=60 years
Asthma	1	2	1	2	
Cancer			1		3
Diabetes					2
Chronic heart disease		1	1	3	6
HIV/other immune deficiency		1			
Chronic lung disease		3	2	5	4
Neuromuscular disorder					1
No underlying condition	5	4	6	3	5
Other (please specify separately)			1		
Obesity (BMI between 30 and 40)			4	3	1
Pregnancy			2		
Underlying condition unknown	2	3	9	4	5

Note: Obesity is considered an underlying condition only if any other underlying conditions are not present. One case can have more than one underlying condition.

Table 12: Additional clinical complications in SARI cases by age group, week 3/2010

Additional clinical complications	Infant below 2 years	2-17 years	18-44 years	45-59 years	>=60 years
Acute respiratory distress syndrome		1	1	5	5
Myocarditis			1	1	
None			1		1
Pneumonia (secondary bacterial infection)	1	1	3	5	5
Unknown	7	11	20	6	12

Note: One case can have more than one complication.

Description of the system

A number of Member States carry out hospital-based surveillance of severe acute respiratory infection (SARI) exhaustively or at selected sentinel sites. SARI surveillance serves to monitor the trends in the severity of influenza and potential risk factors for severe disease to help guide preventive measures and health care resource allocation.

Qualitative reporting

Qualitative monitoring will be an acceptable replacement for the quantitative monitoring when reliable numbers are no longer available for reporting due to overburdened surveillance systems. The qualitative components will give some indication of influenza intensity, geographic spread, trend and impact.

The report text was written by an editorial team at the [European Centre for Disease Prevention and Control](#) (ECDC): Flaviu Plata, Phillip Zucs, Bruno Ciancio, Rene Snacken and Eeva Broberg. The bulletin text was reviewed by the Community Network of Reference Laboratories for Human Influenza in Europe (CNRL) coordination team: Adam Meijer, Rod Daniels, Alan Hay and Maria Zambon. On behalf of the EISN members the bulletin text was reviewed by Joan O'Donnell (Health Protection Surveillance Centre, Ireland) and Katarina Prosenec (National Institute of Public Health, Slovenia).

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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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