

# SURVEILLANCE REPORT

## Weekly influenza surveillance overview

5 February 2010

### Main surveillance developments in week 4/2010 (25 Jan 2010—31 Jan 2010)

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

- The 2009 influenza A(H1N1) pandemic is well past its peak in EU/EEA countries and medium intensity transmission was confined to five countries, all in Eastern or South-eastern Europe. Elsewhere intensity was low.
- Transmission of the pandemic virus continues at low levels on a local or regional basis in another six countries
- Of the 816 specimens collected by sentinel physicians, 9% were found positive for influenza A virus.
- There is no indication of any increase in the incidence of non-pandemic influenza viruses since the beginning of the New Year. Overall since week 40/2009, 99% of all subtyped specimens were identified as pandemic virus.
- The number of reported SARI cases continued to decline. Of the 41 SARI cases for whom underlying conditions were noted, 11 (27%) had no known underlying condition.

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

**Virological surveillance:** Sentinel physicians collected 816 respiratory specimens, 76 (9%) of which were positive for influenza virus. Since week 40/2009, 99% of the viruses detected in sentinel specimens were 2009 pandemic influenza A(H1N1) virus. For more information, [click here](#).

**Aggregate numbers of 2009 pandemic influenza (H1N1) deaths:** In week 04/2010, seven countries reported 74 deaths. For more information, [click here](#).

**Hospital surveillance of severe acute respiratory infection (SARI):** During week 04/2010, 64 SARI cases were reported. All of the 41 influenza viruses isolated from SARI patients and subtyped were the pandemic virus. For more information, [click here](#).

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

# Sentinel surveillance (ILI/ARI)

## Weekly analysis—epidemiology

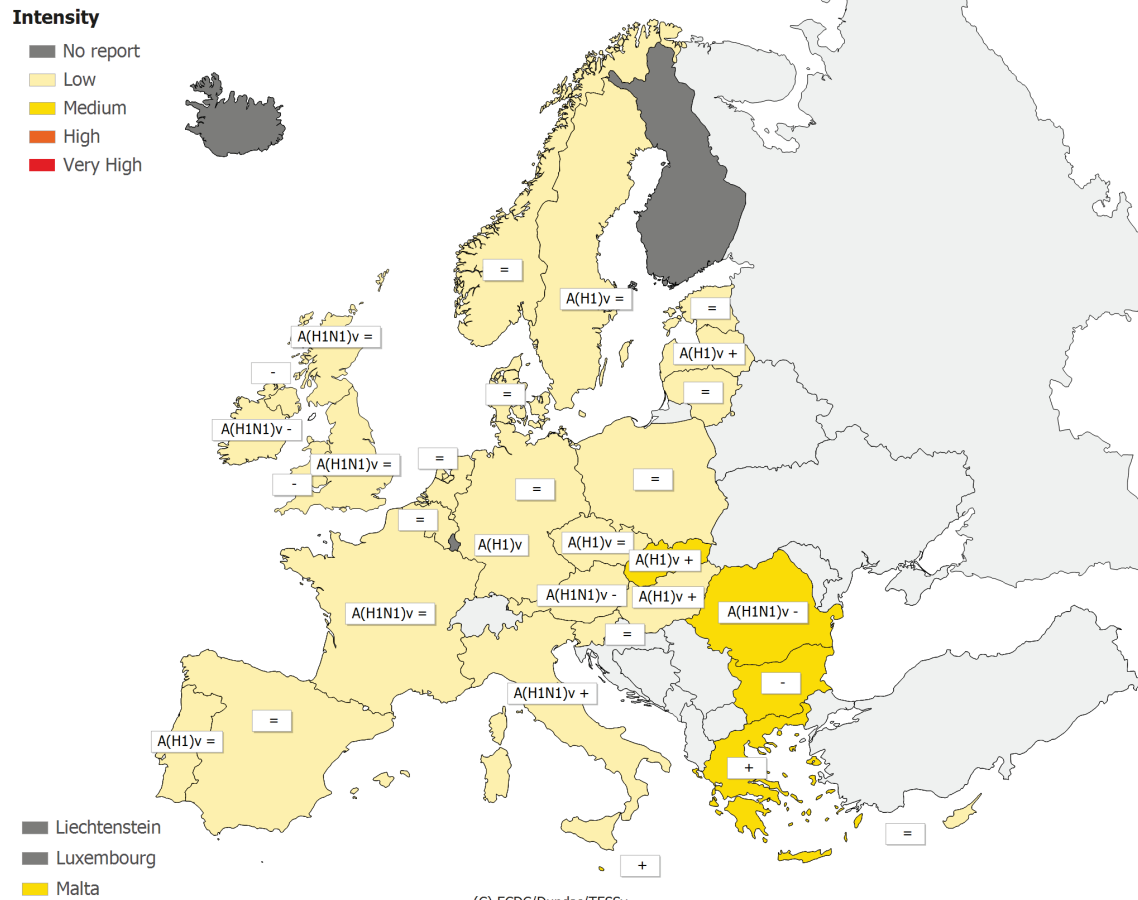
In week 4/2010, 26 of 29 countries reported epidemiological data. For the activity intensity indicator, five countries reported medium activity (Bulgaria, Greece, Malta, Romania and Slovakia) while the remaining countries reported low intensity (Map 1 and Table 1).

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

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

For the majority of countries that reported age specific incidence of ILI and/or ARI, the most affected age group was 0–14 years. In Austria and Norway, the most affected age group was 15–64 years.

**Map 1: Intensity for week 4/2010**

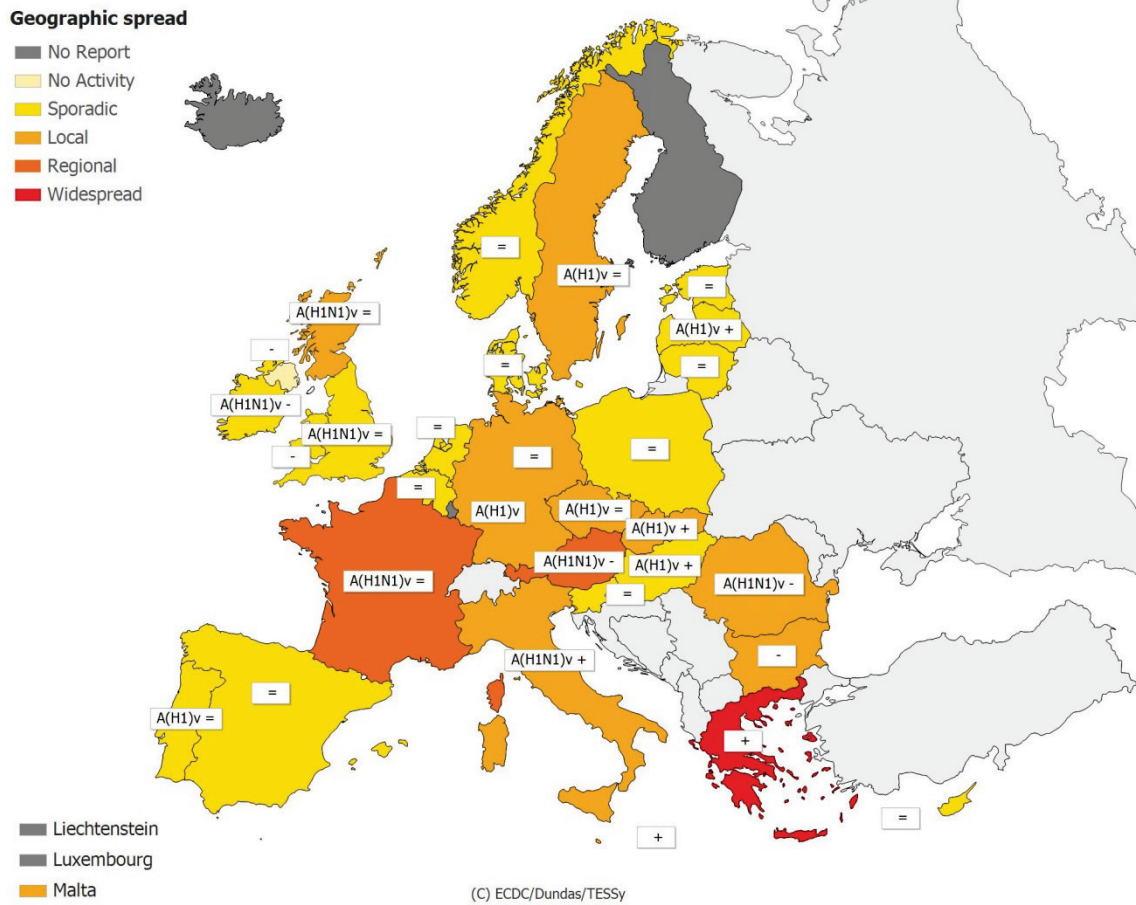


\* A type/subtype is reported as dominant when > 40 % of all samples are positive for the type/subtype.

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(H1)v</b>	Type A, Subtype H1v
		<b>A(H1N1)v</b>	Type A, Subtype H1N1v

**Map 2: Geographic spread for week 4/2010**



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

**Legend:**

<p><b>No activity</b> No evidence of influenza virus activity (clinical activity remains at baseline levels)</p> <p><b>Sporadic</b> Isolated cases of laboratory confirmed influenza infection</p> <p><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)</p> <p><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)</p> <p><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)</p>	<p>- Decreasing clinical activity</p> <p>+ Increasing clinical activity</p> <p>= Stable clinical activity</p> <p><b>A(H1)v</b> Type A, Subtype H1v</p> <p><b>A(H1N1)v</b> Type A, Subtype H1N1v</p>
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**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	13	A(H1N1)v	23.1	-	10.0	Graphs	Graphs
Belgium	Low	Sporadic	Stable	30	None	10.0	76.5	1733.4	Graphs	Graphs
Bulgaria	Medium	Local	Decreasing	16	None	56.3	-	845.2	Graphs	Graphs
Cyprus	Low	Sporadic	Stable	-	-	-	1665.1	10222.0	Graphs	Graphs
Czech Republic	Low	Local	Stable	19	A(H1)v	10.5	40.7	851.5	Graphs	Graphs
Denmark	Low	Sporadic	Stable	33	None	24.2	45.0	0.0	Graphs	Graphs
Estonia	Low	Sporadic	Stable	13	None	23.1	10.3	264.0	Graphs	Graphs
Finland				-	-	-	-	-	Graphs	Graphs
France	Low	Regional	Stable	172	A(H1N1)v	7.6	-	1879.2	Graphs	Graphs
Germany	Low	Local	Stable	-	-	-	-	1044.7	Graphs	Graphs
Greece	Medium	Widespread	Increasing	13	None	50.0	132.8	-	Graphs	Graphs
Hungary	Low	Sporadic	Increasing	88	A(H1)v	4.6	154.2	-	Graphs	Graphs
Iceland				-	-	-	-	-	Graphs	Graphs
Ireland	Low	Sporadic	Decreasing	7	A(H1N1)v	0.0	7.5	-	Graphs	Graphs
Italy	Low	Local	Increasing	33	A(H1N1)v	0.0	184.5	-	Graphs	Graphs
Latvia	Low	Sporadic	Increasing	0	A(H1)v	-	0.9	1032.4	Graphs	Graphs
Lithuania	Low	Sporadic	Stable	0	None	-	3.3	499.6	Graphs	Graphs
Luxembourg				25	A(H1)v	12.0	-	-	Graphs	Graphs
Malta	Medium	Local	Increasing	-	-	-	11055.3	-	Graphs	Graphs
Netherlands	Low	Sporadic	Stable	20	None	5.0	43.1	-	Graphs	Graphs
Norway	Low	Sporadic	Stable	2	None	0.0	34.1	-	Graphs	Graphs
Poland	Low	Sporadic	Stable	14	None	0.0	87.8	-	Graphs	Graphs
Portugal	Low	Sporadic	Stable	6	A(H1)v	0.0	10.5	-	Graphs	Graphs
Romania	Medium	Local	Decreasing	28	A(H1N1)v	14.3	0.7	772.7	Graphs	Graphs
Slovakia	Medium	Local	Increasing	3	A(H1)v	0.0	195.7	1525.5	Graphs	Graphs
Slovenia	Low	Sporadic	Stable	6	None	0.0	4.3	1098.3	Graphs	Graphs
Spain	Low	Sporadic	Stable	90	None	4.4	18.1	-	Graphs	Graphs
Sweden	Low	Local	Stable	9	A(H1)v	0.0	0.6	-	Graphs	Graphs
UK - England	Low	Sporadic	Stable	117	A(H1N1)v	20.7	12.5	387.8	Graphs	Graphs
UK - Northern Ireland	Low	No activity	Decreasing	7	None	0.0	18.1	354.8	Graphs	Graphs
UK - Scotland	Low	Local	Stable	52	A(H1N1)v	9.6	6.1	250.9	Graphs	Graphs
UK - Wales	Low	Sporadic	Decreasing	-	-	-	3.5	-	Graphs	Graphs
Europe				816		9.9				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 4/2010, 24 countries reported virological data. Sentinel physicians collected 816 specimens, 76 (9%) of which were positive for influenza virus (Tables 1 and 2). In addition, 355 non-sentinel source specimens (i.e. specimens collected for diagnostic purpose in hospitals) were reported positive for influenza virus. Of the 16 721 influenza viruses detected by sentinel practices and sub-typed since week 40/2009, 16 619 (99.4%) 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. The percent of positive sentinel samples has decreased since week 47/2009. Figures 1–3 show the trends over time of virological detections.

From week 40/2009 to week 4/2010, 1856 antigenic and/or antigenic characterisation of influenza viruses from sentinel and non-sentinel specimens were reported: one AH1A/Brisbane/59/2007, seven A(H3) A/Brisbane/10/2007 (H3N2)-like, 13 A(H3) A/Perth/16/2009 (H3N2)-like, two B/Brisbane/60/2008-like (B/Victoria/2/87 lineage) and 1833 AH1v/California/7/2009. The distribution of antigenic characterised strains is presented in Table 3.

All pandemic viruses tested have been resistant to M2 inhibitors. Of 1282 viruses tested from nine countries, 37 (2.9%) were resistant to oseltamivir, and of the 1276 tested isolates none were resistant to zanamivir (Table 4).

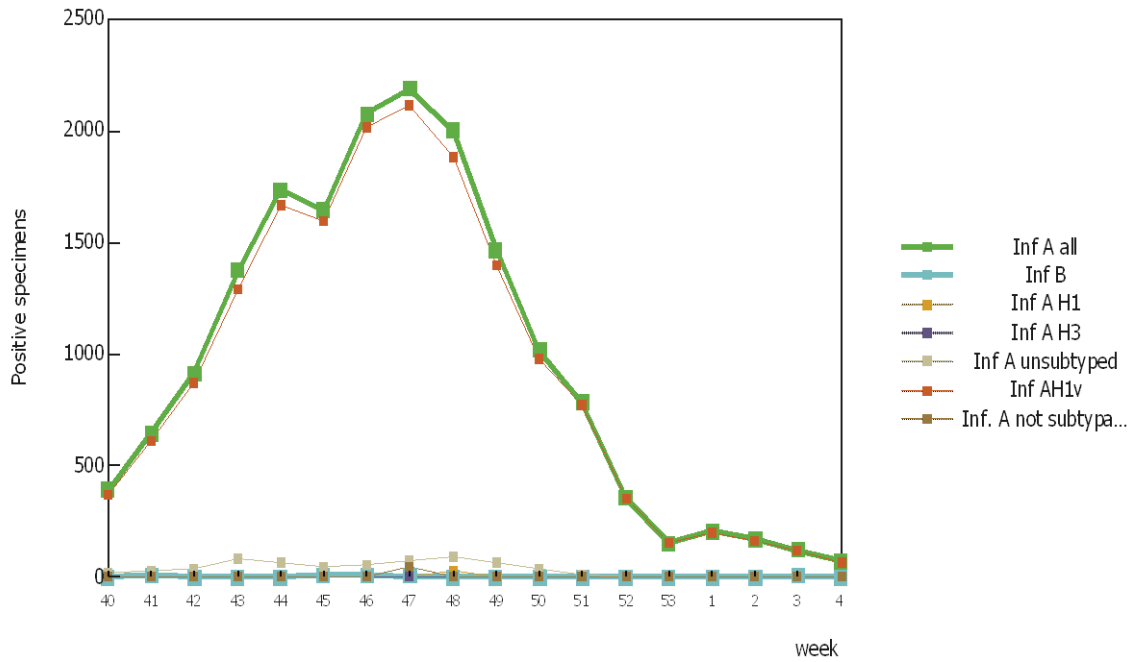
Since its peak in week 1/2010, the total number of respiratory syncytial virus (RSV) detections in 11 countries decreased up until week 3/2010 and had a slight increase in week 4/2010 (Figure 5).

**Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2009–04/2010**

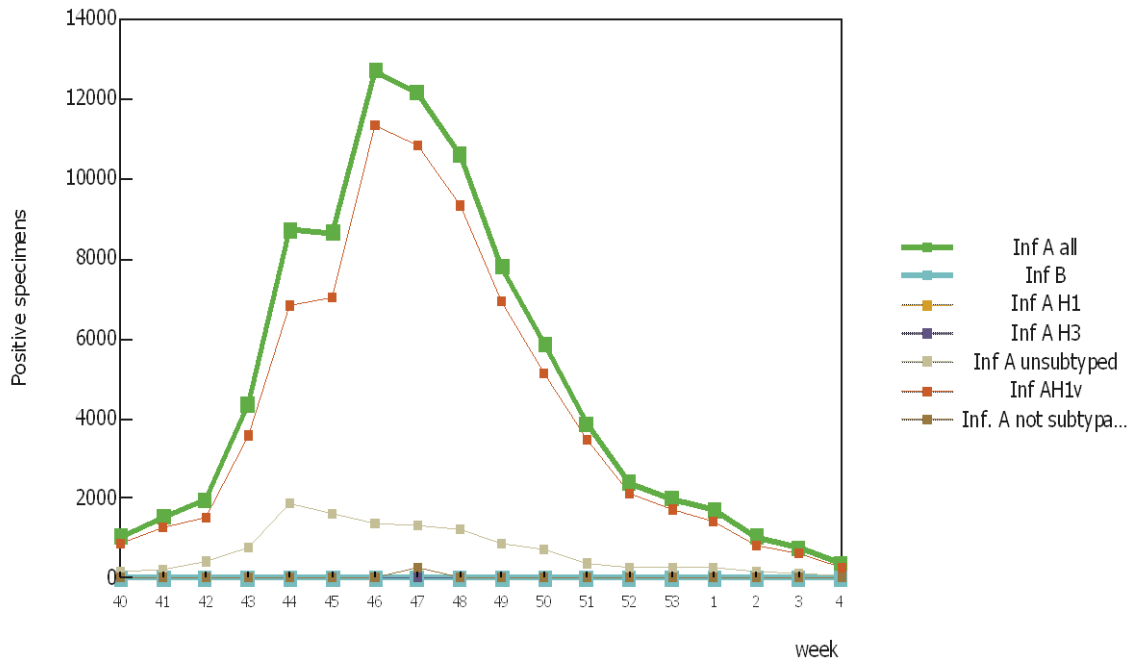
Virus type/subtype	Current Week		Season	
	Sentinel	Non-sentinel	Sentinel	Non-sentinel
Influenza A	74	353	17374	87693
A (pandemic H1N1)	70	279	16619	75219
A (subtyping not performed)	4	71	653	12080
A (not subtypable)	0	3	61	309
A (H3)	0	0	6	36
A (H1)	0	0	35	49
Influenza B	2	2	60	88
<b>Total Influenza</b>	<b>76</b>	<b>355</b>	<b>17434</b>	<b>87781</b>

*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 40/2009–04/2010**

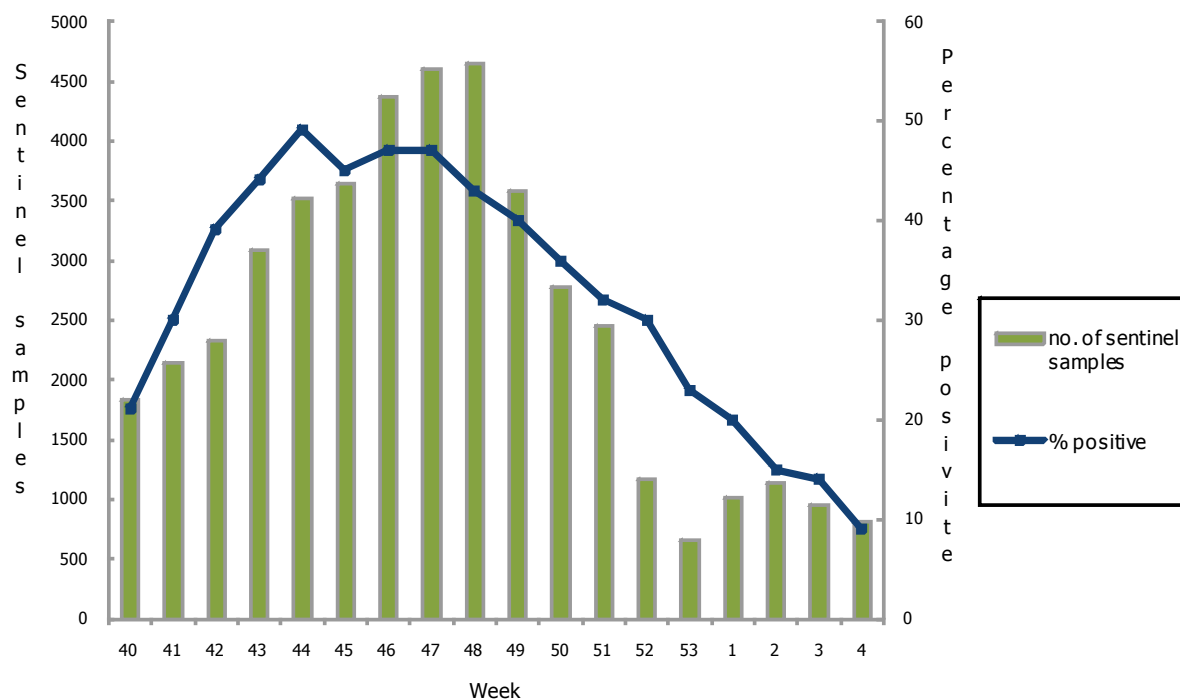


**Figure 2: Number of non-sentinel specimens positive for influenza by type, subtype and week of report, weeks 40/2009–04/2010**





**Figure 3: Proportion of sentinel samples positive for influenza, weeks 40/2009–04/2010**



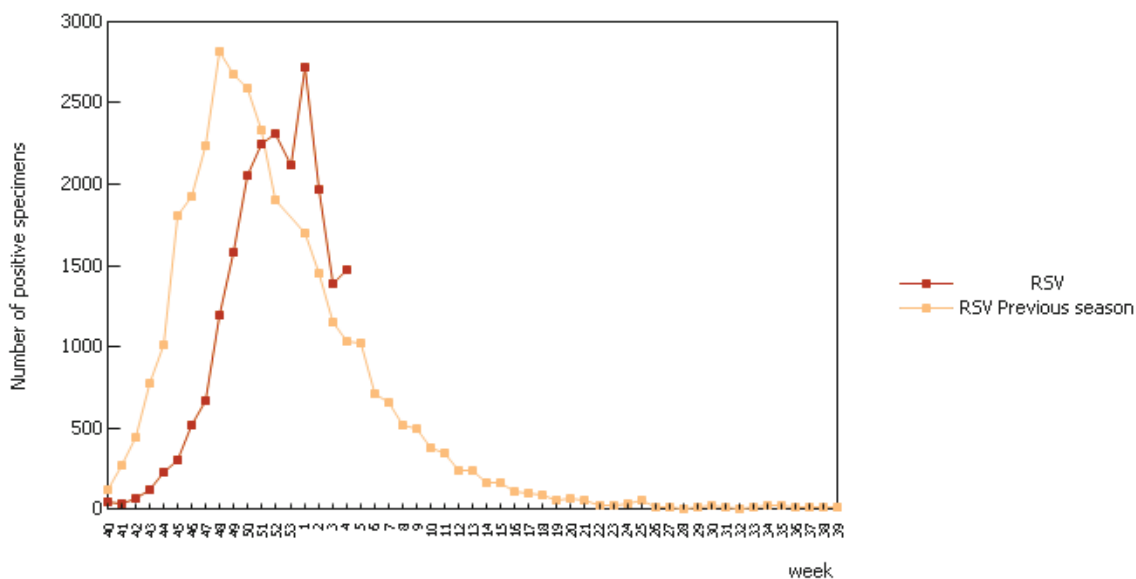
**Table 3: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates since week 40/2009**

Strain name	Number of strains
A(H3) A/Brisbane/10/2007 (H3N2)-like	7
A(H1)v California/7/2009-like	1449
A(H3) A/Perth/16/2009 (H3N2)-like	4
B/Brisbane/60/2008-like (B/Victoria/2/87 lineage)	1

**Table 4: Antiviral resistance of influenza by virus type and subtype, weeks 40/2009–04/2010**

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)						
A(H1N1)						
A(H1N1)v	1282	37 (2.9%)	1276	0 (0%)	153	153 (100%)
B						

**Figure 4: Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40/2009–04/2010**



## Comments on virological data provided by countries in week 4/2010

By week 5/2010 in the Netherlands, 17 patients were diagnosed with oseltamivir resistant 2009 pandemic influenza A(H1N1) virus. In all except 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 2009 pandemic influenza A(H1N1) associated deaths

## Weekly analysis—deaths

In week 04/2010, seven countries reported 74 deaths. Since the beginning of the pandemic, 1528 deaths have been notified to ECDC through TESSy.

**Table 5: Aggregate numbers of pandemic (H1N1) 2009 deaths, week 04/2010**

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	0	91	2010-w04
Denmark		0	2009-w36
Estonia	0	14	2010-w04
Finland		0	2009-w36
France	3	285	2010-w04
Germany	2	215	2010-w04
Greece	9	118	2010-w04
Hungary	5	112	2010-w04
Iceland		2	2009-w52
Ireland	0	22	2010-w04
Italy		1	2009-w52
Latvia		31	2009-w53
Lithuania	1	22	2010-w04
Luxembourg		3	2009-w52
Malta	0	5	2010-w04
Netherlands	0	56	2010-w04
Norway	0	29	2010-w04
Poland		9	2009-w47
Portugal		0	2009-w36
Romania	6	116	2010-w04
Slovakia	48	95	2010-w04
Slovenia	0	19	2010-w04
Spain		4	2009-w29
Sweden	0	24	2010-w04
United Kingdom		215	2010-w01
Total	74	1528	

## 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 04/2010, 64 SARI cases were reported, 27 of which (42.2%) had symptom onset during the same week. The number of SARI cases by week of onset has been declining since the peak in week 46/2009 (Figure 5). Since the beginning of SARI surveillance, 11 countries have reported 10 634 cases, including 484 fatalities (Table 5).

All the 41 influenza viruses isolated from the SARI cases were the 2009 pandemic influenza A(H1N1) virus (Table 8).

Of the 64 SARI cases reported during week 4/2010, only three were known to have received antiviral prophylaxis and 24 were known to have received antiviral therapy (Table 9)

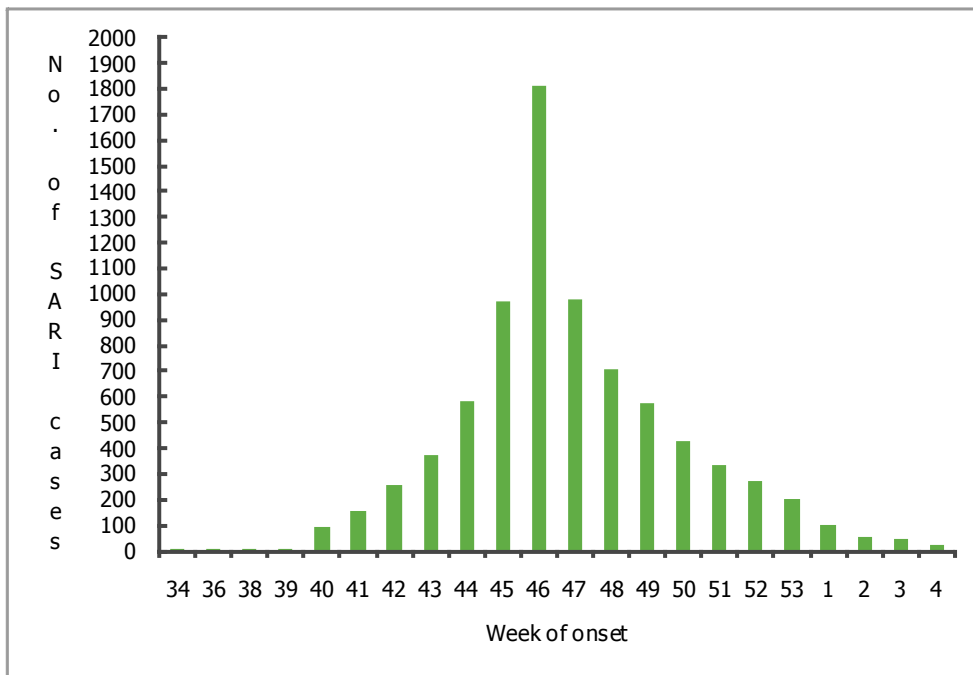
Of the 64 SARI cases, 28 (44%) were known to have required ICU admission and 15 (23%) needed ventilator support (Table 10).

Of the 41 SARI cases for whom underlying conditions were noted, 11 (27%) reported no known underlying condition whatsoever. Asthma and other chronic lung diseases alone or associated with other conditions were reported in 14 cases (Figure 6).

**Table 6: Cumulative number of SARI cases, weeks 40/2009—week 04/2010**

Country	Number of cases	Incidence of SARI cases per 100000 population	Number of fatal cases reported	Incidence of fatal cases per 100000 population	Estimated population covered
Austria	2806		33		
Belgium	1634	15.31			10668666
Cyprus	20		5		
Finland	1390		41		
France	1304		270		
United Kingdom	1360	3.44	52	0.13	39503332
Ireland	888		17		
Malta	145	35.05	1	0.24	413609
Netherlands	628	3.80	27	0.16	16521505
Romania	182	1.43	11	0.086	12684180
Slovakia	277		27		
Total	10634		484		79791292

**Figure 5: Number of SARI cases by week of onset, week 04/2010**



**Table 7: Number of SARI cases by age and gender, week 04/2010**

Age groups	Male	Female
Under 2	3	6
2-17	5	6
18-44	5	6
45-59	12	6
>=60	9	6
Total	34	30

**Table 8: Number of SARI cases by influenza type and subtype, week 04/2010**

Virus type/subtype	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	41	8600
A (pandemic H1N1)	41	8546
A(subtyping not performed)		26
A(H3)		
A(H1)		28
A(H5)		
Influenza B		
Unknown	23	2034
Total	64	10634

**Table 9: Number of SARI cases by antiviral treatment, week 04/2010**

Antiviral treatment	Number of patients who received prophylaxis	Number of patients who received anti-viral treatment
Oseltamivir		19
Zanamivir		1
Oseltamivir and Zanamivir		1
Other (or combinations with other)	3	
Other (or any other combination)		3
Unknown	40	28
None	21	12
Total	64	64

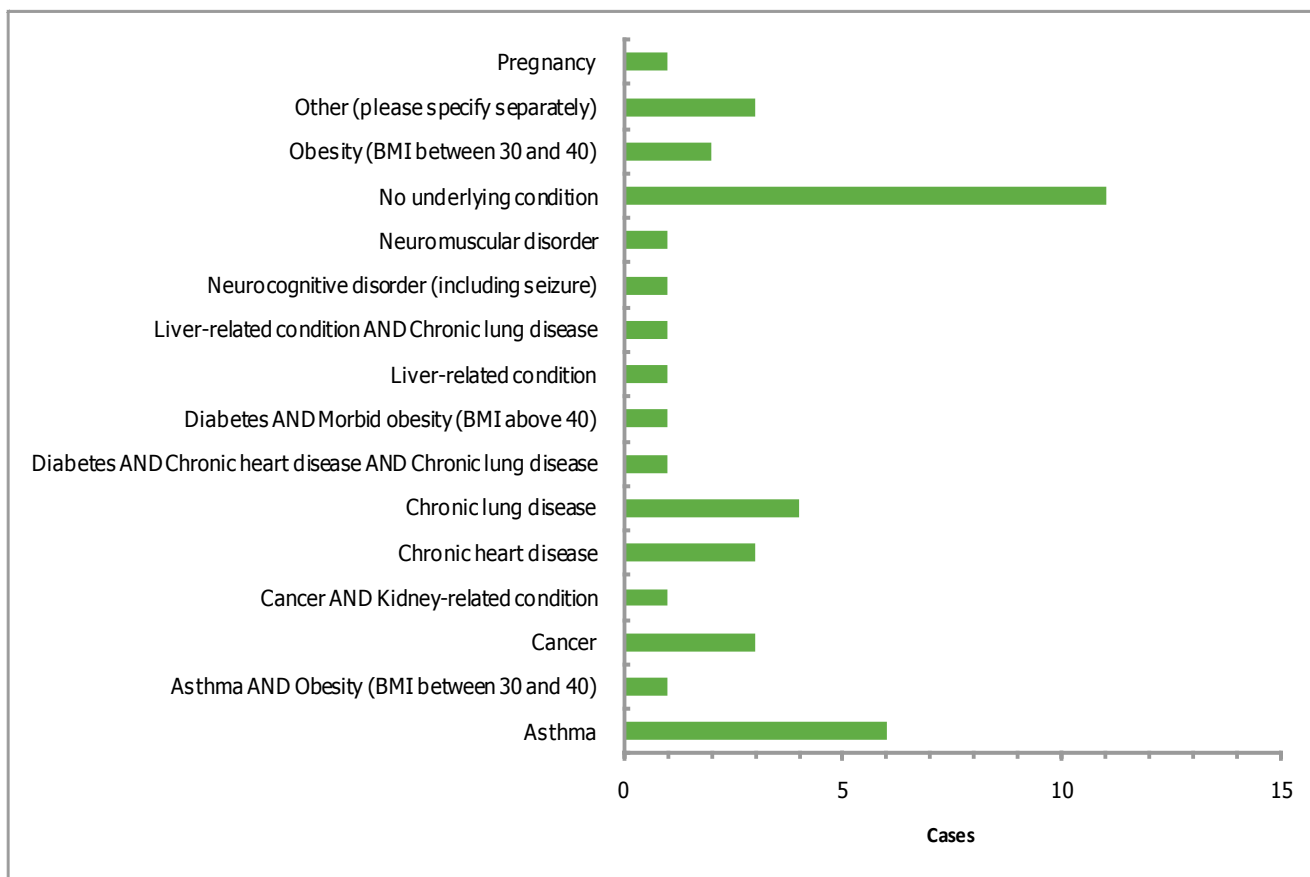
**Table 10: Number of SARI cases by level of care and respiratory support, week 04/2010**

Respiratory support	ICU	Inpatient ward	Other	Unknown
No respiratory support necessary	1	3		
Oxygen therapy	8	15		
Respiratory support given unknown	4	3		15
Ventilator	15			

**Table 11: Number of SARI cases by vaccination status, week 04/2010**

Vaccination Status	Number Of Cases	Percentage of cases
Both, seasonal and pandemic vaccination	2	3.1
Not vaccinated	26	41
Seasonal vaccination	4	6.3
Unknown	32	50
TOTAL	64	

**Figure 6: Number of SARI cases by underlying condition, week 04/2010**



### 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.

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*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 Prosenc (National Institute of Public Health, Slovenia).*

*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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