SURVEILLANCE REPORT

Weekly influenza surveillance overview

02 October 2009

Main surveillance developments in week 39/2009

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

- Four EU countries (Belgium, Ireland, Spain, UK-Northern Ireland) are currently reporting influenza intensity activity above baseline levels. This is extraordinary for this time of the year.
- Pandemic A(H1N1) influenza continues to account for the majority of virus detections.
- Three new SARI cases reported by the Netherlands.

Sentinel surveillance of influenza like illness (ILI)/ acute respiratory illness (ARI): Ireland reported high intensity activity and Belgium, Spain and the UK (Northern Ireland) reported medium intensity activity this week. Ireland also reported widespread activity. Nine countries reported increasing intensity activity as compared to week 38. For more information **click here.**

Virological surveillance: A total of 1181 sentinel specimens were tested during week 39, of which 18% were positive. All the subtyped positive sentinel specimens were identified as influenza A(H1N1)v. For more information **click here.**

Aggregate numbers of pandemic H1N1 2009: Four countries reported 311 newly diagnosed probable and confirmed cases of influenza A(H1N1)v. For more information **click here.**

Hospital surveillance of severe acute respiratory infection (SARI): Three new SARI cases were reported from the Netherlands. For more information **click here.**

Mortality surveillance: No EURO MOMO data are available yet. For more information **click here.**

Qualitative reporting: No qualitative indicator data are available yet given the normal functioning of the routine surveillance systems. For more information **click here.**

Sentinel surveillance (ILI/ARI)

Weekly analysis—epidemiology

For week 39/2009, 19 countries reported epidemiological data. For the intensity activity indicator—national network levels for ILI and/or ARI— Ireland reported high intensity and Belgium, Spain and the UK (Northern Ireland) reported medium intensity. All other countries reported low intensity. For the geographic spread indicator, Belgium and Ireland reported widespread activity whereas Spain and the UK (England) reported local and sporadic activity respectively. Nine countries (Estonia, Hungary, Ireland, Latvia, Portugal, Romania, Slovakia, Spain and the UK (England, Northern Ireland and Scotland)) reported an increasing trend of influenza activity as compared to week 38.

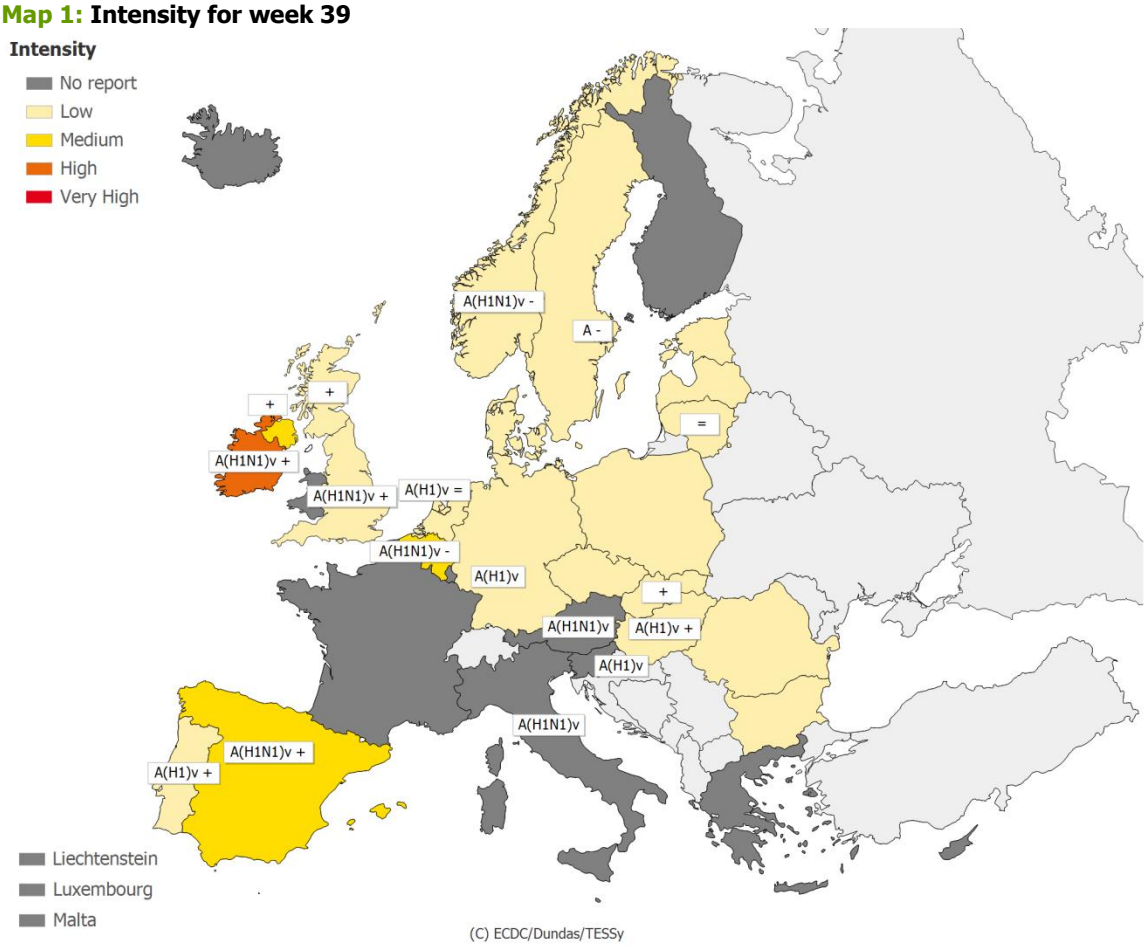
As of week 39/2009, influenza activity above baseline levels has been reported in the following locations: the UK (England) since week 27/2009, Ireland since week 30/2009, the UK (Northern Ireland) since week 31/2009, Norway since week 34/2009, Sweden since week 35/2009, Malta since week 36/2009, and Belgium and Spain in week 39/2009. In the UK (England), influenza activity was high in weeks 28–30, decreased to medium levels in week 32 and to low levels in week 33. In Ireland, influenza activity was at medium levels in week 36 and rose to high levels in week 38. In most locations where influenza activity rose above baseline levels so far, the most affected age group included those aged 5–14 and 15–64 years. Data on activity reported in August is, however, difficult to interpret due to summer holidays affecting routine surveillance functions.

National bulletins available at:

Belgium: http://www.iph.fgov.be/flu/EN/Y2009-Influenza.pdf

UK: http://www.hpa.org.uk/HPA/Topics/InfectiousDiseases/InfectionsAZ/1243928258560/

Map 1: Intensity for week 39

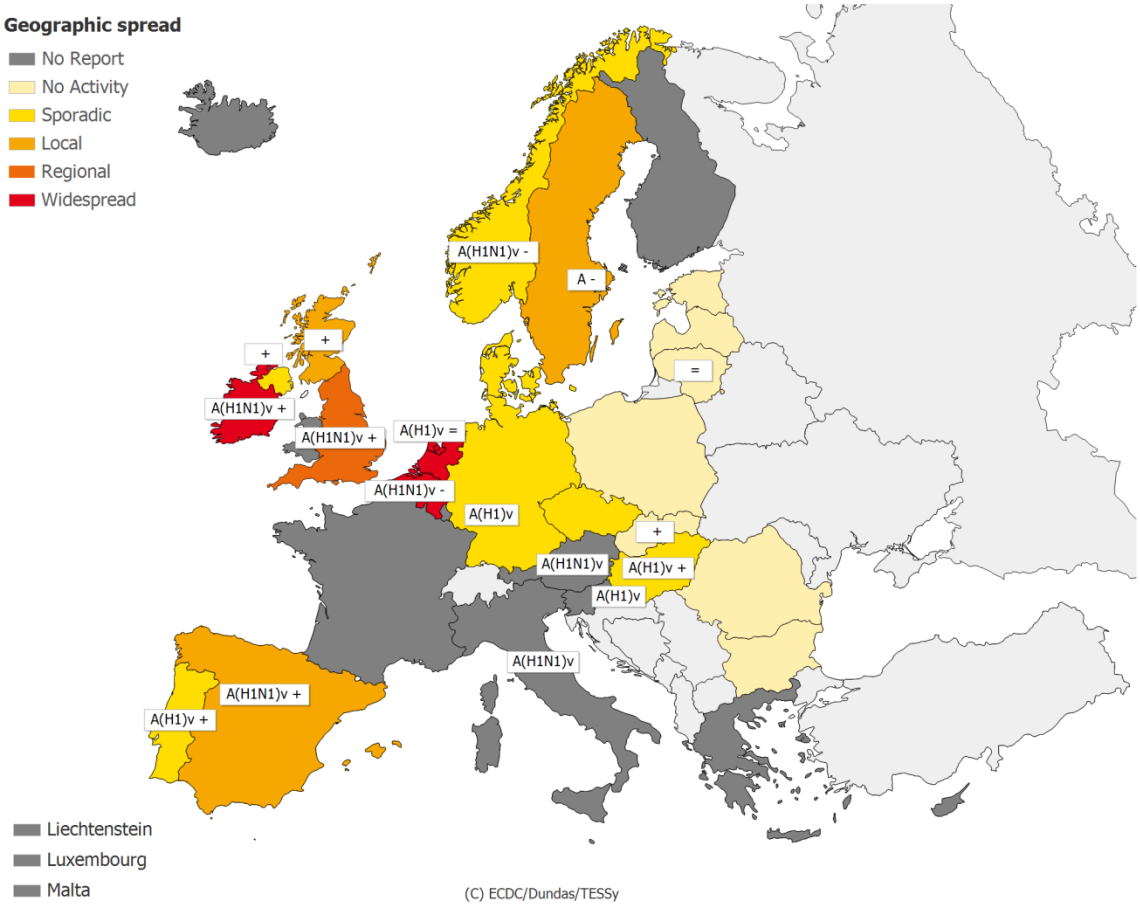


* A type/subtype is reported as dominant when > 40 % of all samples are positive for the type/subtype.

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: Geographical spread for week 39/2009



* 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)
Sporadic	Isolated cases of laboratory confirmed influenza infection
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)
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)
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)

-	Decreasing clinical activity
+	Increasing clinical activity
=	Stable clinical activity
A	Type A
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				8	A(H1N1)v	0.0	-	-	Graphs	Graphs
Belgium	Medium	Widespread	Decreasing	156	A(H1N1)v	14.1	166.7	1586.8	Graphs	Graphs
Bulgaria	Low	No activity	Stable	0	None	-	-	388.6	Graphs	Graphs
Czech Republic	Low	Sporadic	Stable	37	None	0.0	17.8	719.6	Graphs	Graphs
Denmark	Low	Sporadic	Stable	3	None	0.0	49.2	0.0	Graphs	Graphs
Estonia	Low	No activity	Increasing	2	None	0.0	2.5	282.4	Graphs	Graphs
Germany	Low	Sporadic	Stable	50	None	0.0	-	779.1	Graphs	Graphs
Greece				0	None	-	-	-	Graphs	Graphs
Hungary	Low	Sporadic	Increasing	58	A(H1)v	12.1	126.7	-	Graphs	Graphs
Ireland	High	Widespread	Increasing	92	A(H1N1)v	45.7	76.3	-	Graphs	Graphs
Italy				0	A(H1N1)v	-	-	-	Graphs	Graphs
Latvia	Low	No activity	Increasing	1	None	0.0	0.0	558.0	Graphs	Graphs
Lithuania	Low	No activity	Stable	0	-	-	0.2	450.8	Graphs	Graphs
Luxembourg				86	A(H1)v	15.1	-	-	Graphs	Graphs
Netherlands	Low	Widespread	Stable	33	A(H1)v	12.1	-	-	Graphs	Graphs
Norway	Low	Sporadic	Decreasing	13	A(H1N1)v	0.0	111.3	-	Graphs	Graphs
Poland	Low	No activity	Stable	10	None	0.0	26.1	-	Graphs	Graphs
Portugal	Low	Sporadic	Increasing	3	A(H1)v	33.3	20.4	-	Graphs	Graphs
Romania	Low	No activity	Increasing	21	None	0.0	1.3	737.3	Graphs	Graphs
Slovakia	Low	No activity	Increasing	0	-	-	151.4	1397.4	Graphs	Graphs
Slovenia				27	A(H1)v	18.5	-	-	Graphs	Graphs
Spain	Medium	Local	Increasing	362	A(H1N1)v	27.6	77.9	-	Graphs	Graphs
Sweden	Low	Local	Decreasing	66	A	13.6	9.8	-	Graphs	Graphs
UK - England	Low	Regional	Increasing	153	A(H1N1)v	3.8	22.2	359.8	Graphs	Graphs
UK - Northern Ireland	Medium	Sporadic	Increasing	0	-	-	208.3	365.3	Graphs	Graphs
UK - Scotland	Low	Local	Increasing	0	-	-	34.7	258.9	Graphs	Graphs
Europe				1181		17.6			Graphs	Graphs

Link to virological graphs

Link to epidemiological graphs

Description of the system

This surveillance is based on nationally organised sentinel networks of physicians, mostly general practitioners (GPs), representing 1–5% of GPs working in their countries. All EU/EEA Member States (except Cyprus, Iceland and 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 national level, both numerator and denominator data are then reported to the European

Surveillance System (TESSy) database and allow a semi-quantitative assessment of intensity, geographic spread and trend of influenza activity.

Virological surveillance

Weekly analysis—virology

In week 39, 24 countries reported virological data. Sentinel physicians collected 1181 respiratory specimens, of which 208 (18%) were positive for influenza virus (Table 1). In addition, 700 non-sentinel source specimens (e.g. specimens collected for diagnostic purposes in hospitals) were reported positive for influenza virus. Table 2 shows the distribution of sentinel and non-sentinel specimens by type and subtype; figures 1–3 show the temporal trends. The proportion of positive sentinel specimens shows a peak in week 29 (>25%) and fluctuates thereafter between 15 and 20%.

Based on the antigenic and/or genetic characterisation of 14 111 influenza viruses reported from week 40/2008 to week 39/2009, 9422 (67%) were reported as A/Brisbane/10/2007 (H3N2)-like, 571 (4%) as A/Brisbane/59/2007 (H1N1)-like, 107 (<1%) as B/Florida/4/2006-like (B/Yamagata/16/88 lineage), 3723 (26%) as B/Malaysia/2506/2004-like or B/Brisbane/60/2008-like (B/Victoria/2/87 lineage) and 288 (2%) as A/California/7/2009 (H1N1)v-like. Figure 4 shows the results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates since week 40/2008.

Among the reported A(H1N1)v viruses tested so far, all were sensitive to oseltamivir and zanamivir but resistant to M2 inhibitors. Reports from other sources confirm that resistance of the A(H1N1)v virus to neuraminidase inhibitors remains very rare.

Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 16-39/2009

	Current Week		Season	
Virus type/subtype	Sentinel	Non-sentinel	Sentinel	Non-sentinel
Influenza A	208	705	4729	87898
A (pandemic H1N1)	192	601	3597	71011
A (subtyping not performed)	16	87	553	13392
A (not subtypable)	0	8	0	178
A (H3)	0	8	408	2370
A (H1)	0	1	171	839
Influenza B	0	3	1431	2899
Total Influenza	**208**	**708**	**6160**	**90821**

Figure 1: Number of sentinel specimens positive for influenza, by type, subtype and by week of report—weeks 16–39

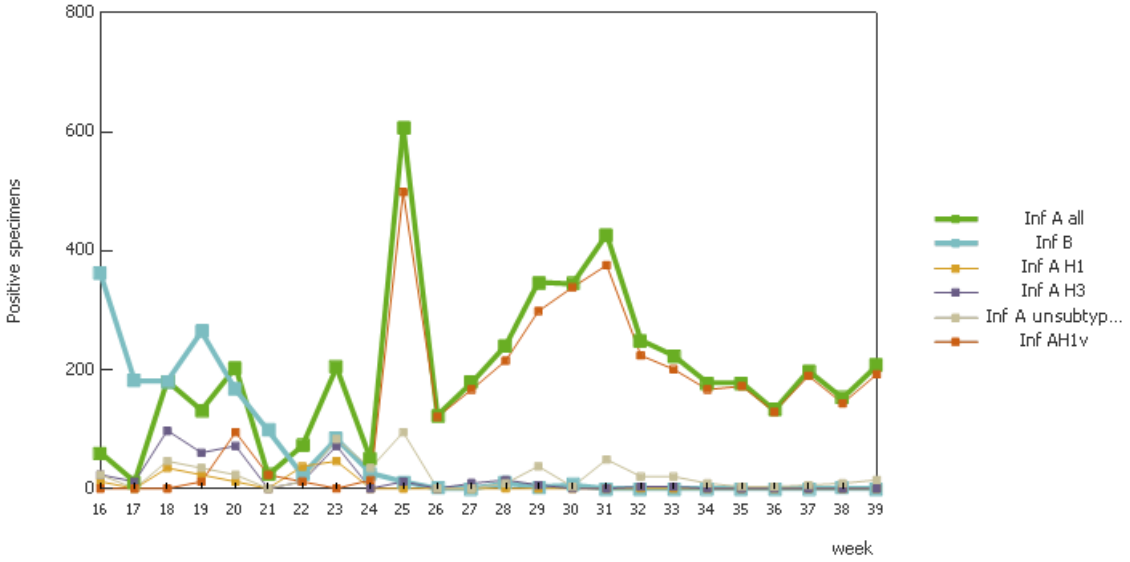


Figure 2: Number of non-sentinel specimens positive for influenza by type, subtype and week of report

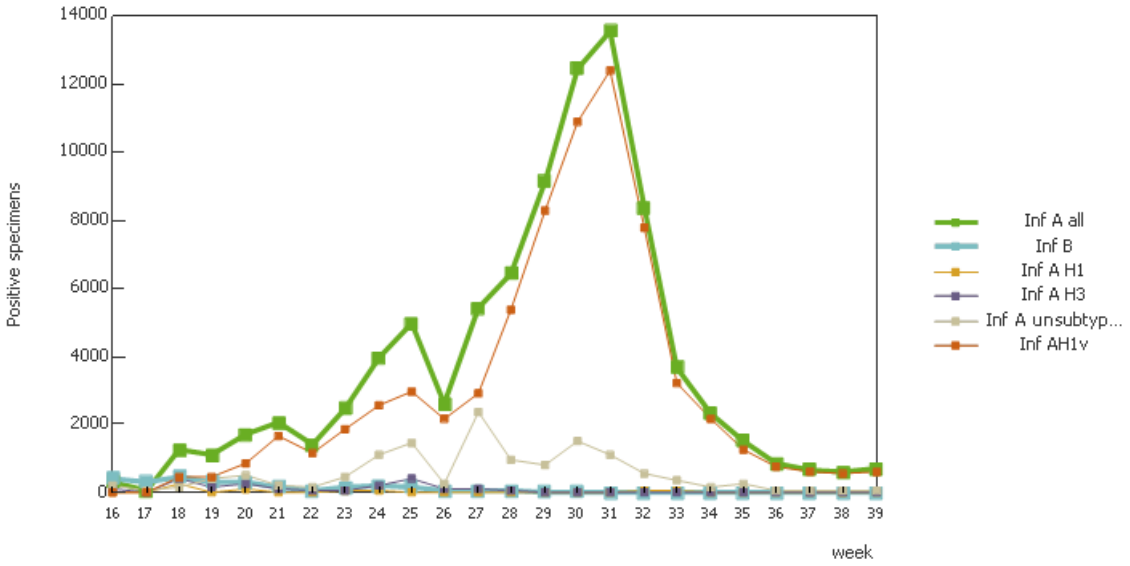


Figure 3: Proportion of sentinel samples positive for influenza–weeks 16-38

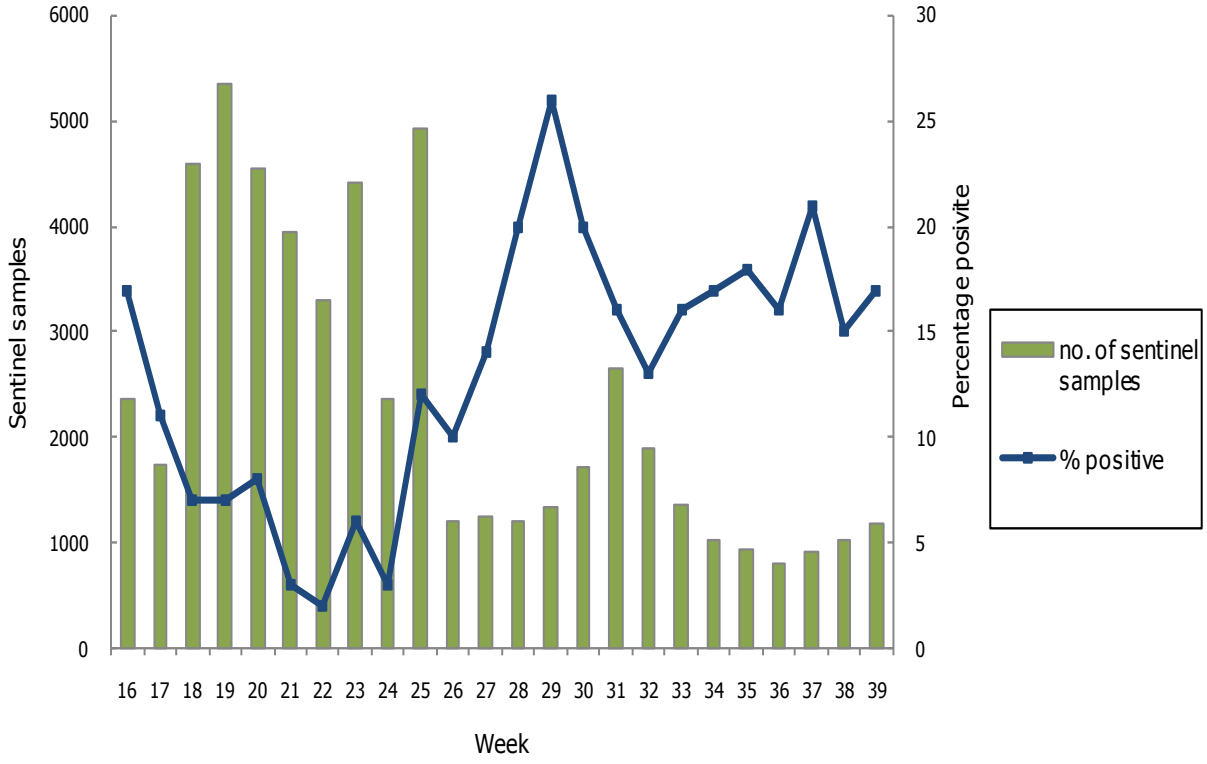


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates since week 16, 2009

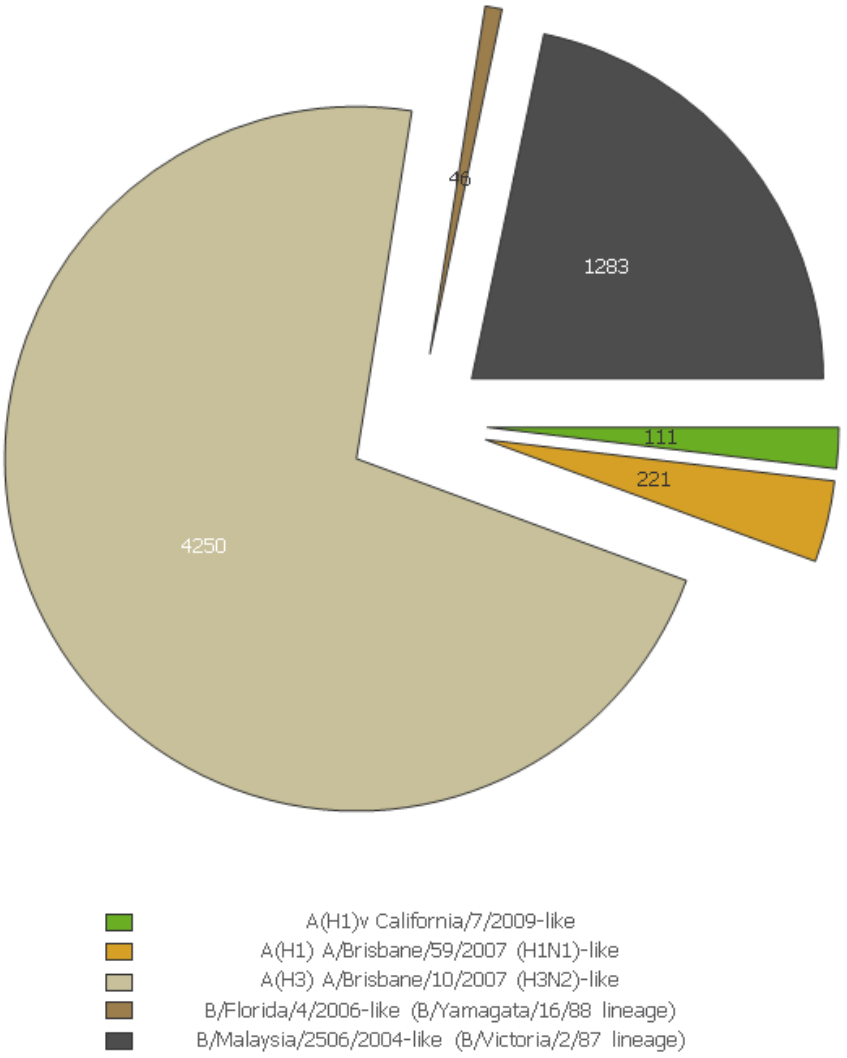


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2008–39/2009

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)	653	0	612	0	644	644 (100%)
A(H1N1)	260	256 (98%)	260	0	124	1 (1%)
A(H1N1)v	424	0	415	0	56	56 (100%)
B	117	0	113	0		

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

Aggregate numbers of pandemic (H1N1) 2009 cases and deaths

Weekly analysis—cases and deaths

During week 39, four countries reported 311 newly diagnosed probable and confirmed cases of influenza pandemic A(H1N1) influenza ;181 in Ireland, 64 in Norway, 60 in Sweden and six in Romania. The cumulative number of reported cases since the beginning of the pandemic in EU/EEA Member States totals 43 554, of which 49 are known to have died.

Discrepancies with the ECDC daily pandemic A(H1N1) 2009 update are due to unsynchronised reporting related to the ongoing transition to TESSy.

Table 4: Aggregate numbers of pandemic (H1N1) 2009 cases and deaths

	Weekly		Cumulate	
Country	Cases	Death	Cases	Death
Austria	-	-	330	0
Belgium	-	-	126	0
Bulgaria	-	-	64	0
Cyprus	-	-	297	0
Czech Republic	0	0	269	0
Denmark	-	-	562	0
Estonia	0	0	68	0
Finland	-	-	222	0
France	-	-	464	0
Germany	-	-	16835	0
Greece	-	-	1839	1
Hungary	-	-	151	1
Iceland	-	-	165	0
Ireland	181	0	1353	2
Italy	-	-	618	0
Latvia	-	-	27	0
Lithuania	-	-	51	0
Luxembourg	-	-	0	0
Malta	-	-	390	2
Netherlands	-	-	1121	4
Norway	64	0	1064	2
Poland	-	-	157	0
Portugal	-	-	2624	0
Romania	6	0	332	0
Slovakia	-	-	125	0
Slovenia	-	-	217	0
Spain	-	-	1308	4
Sweden	60	0	1440	2
United Kingdom	-	-	11335	31
Total	**311**	**0**	**43554**	**49**

Countries shaded with grey are not recommending laboratory tests for all suspect cases, therefore comparisons in time or between these countries should not be made at present. Fatal cases are reported in the country where the death occurred.

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.

Hospital surveillance (SARI)

Weekly analysis – SARI

During week 39, three cases of SARI were reported by the Netherlands. A total of 16 SARI cases have been reported to date by the Netherlands. Of the three cases reported in week 39/2009, two were in the 18–44 years age groups and one in the 45–64. All had one of the underlying conditions known to increase the risk of severe influenza illness.

Table 5: Number of SARI cases by week of onset, as of week 39/2009

Country	Number of sentinel sites	Estimated population covered	Geographical coverage (national, regional)	Estimated notification rate (in the covered geographic area)	Number of cases	Number of fatal cases reported
Netherlands			Unknown		16	
Total					16	

Figure 5: Number of SARI cases by date of onset, as of week 39/2009

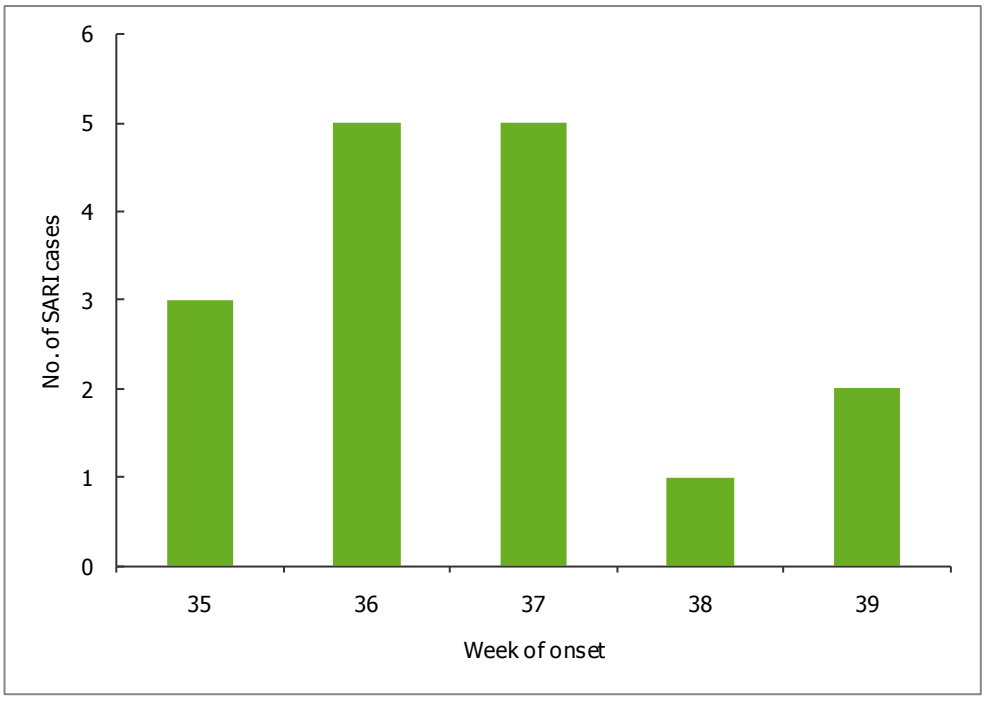


Table 6: Number of SARI cases by influenza type and subtype, as of week 39/2009

Virus type/subtype	Number of cases (and percentage) during current week	Cumulative number of cases (and percentage) since the start of the season
Influenza A		
A (pandemic H1N1)	3 (100.0 %)	16 (100.0 %)
A(subtyping not performed)		
A(H3)		
A(H1)		
A(H5)		
Influenza B		
Unknown		
Total	3	16

Table 7: Number of SARI cases by antiviral treatment and resistance, as of week 39/2009

Antiviral treatment	Number (percentage) of patients who received prophylaxis	Number (percentage) of patients who received anti-viral treatment	Number (percentage) of patients with strains resistant to treatment
Oseltamivir		3 (100.0 %)	
Unknown	3 (100.0 %)		3 (100.0 %)
Total	3	3	3

Table 8: Number of SARI cases by underlying condition and age group, as of week 39/2009

Underlying condition/risk factor	Infant below 2 years Numbers and percentage	2-17 years Numbers and percentage	18-44 years Numbers and percentage	45-59 years Numbers and percentage	>=60 years Numbers and percentage
Other (please specify separately)			1 (50.0%)	1 (100.0%)	
Pregnancy			1 (50.0%)		

Table 9: Number SARI cases by complication and age group, as of week 39/2009

Underlying condition/risk factor	Infant below 2 years Numbers and percentage	2-17 years Numbers and percentage	18-44 years Numbers and percentage	45-59 years Numbers and percentage	>=60 years Numbers and percentage
Pneumonia (secondary bacterial infection)			2 (100.0%)	1 (100.0%)	

Table 10: Number of SARI by underlying condition by level of care, as of week 39/2009

	ICU	Inpatient ward	Other	Unknown
Other (please specify separately)	1 (100.0%)			
Other (please specify separately)		1 (50.0%)		
Pregnancy		1 (50.0%)		

Table 11: **Number of SARI by underlying condition and level of respiratory support, as of week 39/2009**

	Oxygen therapy	Ventilator support provided	Ventilator support necessary but not available	Respiratory support given unknown
Other (please specify separately)				
Other (please specify separately)		1 (100.0%)		
Pregnancy				

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.

Mortality surveillance

Collection of European mortality data from selected countries is undertaken by the EuroMOMO project coordinated by the Statens Serum Institut in Denmark. Because the project is a pilot, outputs are not validated and may be artificial. Therefore, publication of such outputs is currently limited and subject to consent of the participating countries.

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.