SURVEILLANCE REPORT

Weekly influenza surveillance overview

25 September 2009

Main surveillance developments in week 38/2009

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

- Ireland reported high intensity and widespread activity while the UK (Northern Ireland) reported medium intensity and local activity.
- Ninety-six per cent of virus detections from sentinel physicians were influenza A(H1N1)v virus.

Sentinel surveillance of influenza like illness (ILI)/ acute respiratory illness (ARI): Ireland reported high intensity and the UK (Northern Ireland) reported medium intensity activity this week. Ireland also reported widespread activity. All other reporting European countries reported low activity. For more information **click here.**

Virological surveillance: The proportion of influenza-positive sentinel samples was 14%, of which 96% were influenza A(H1N1)v. For more information **click here.**

Aggregate numbers of pandemic H1N1 2009: Seven countries reported 544 newly diagnosed probable and confirmed cases of influenza A(H1N1)v and five deaths. Four of the five deaths were reported by the Netherlands and one by Norway. For more information **click here.**

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

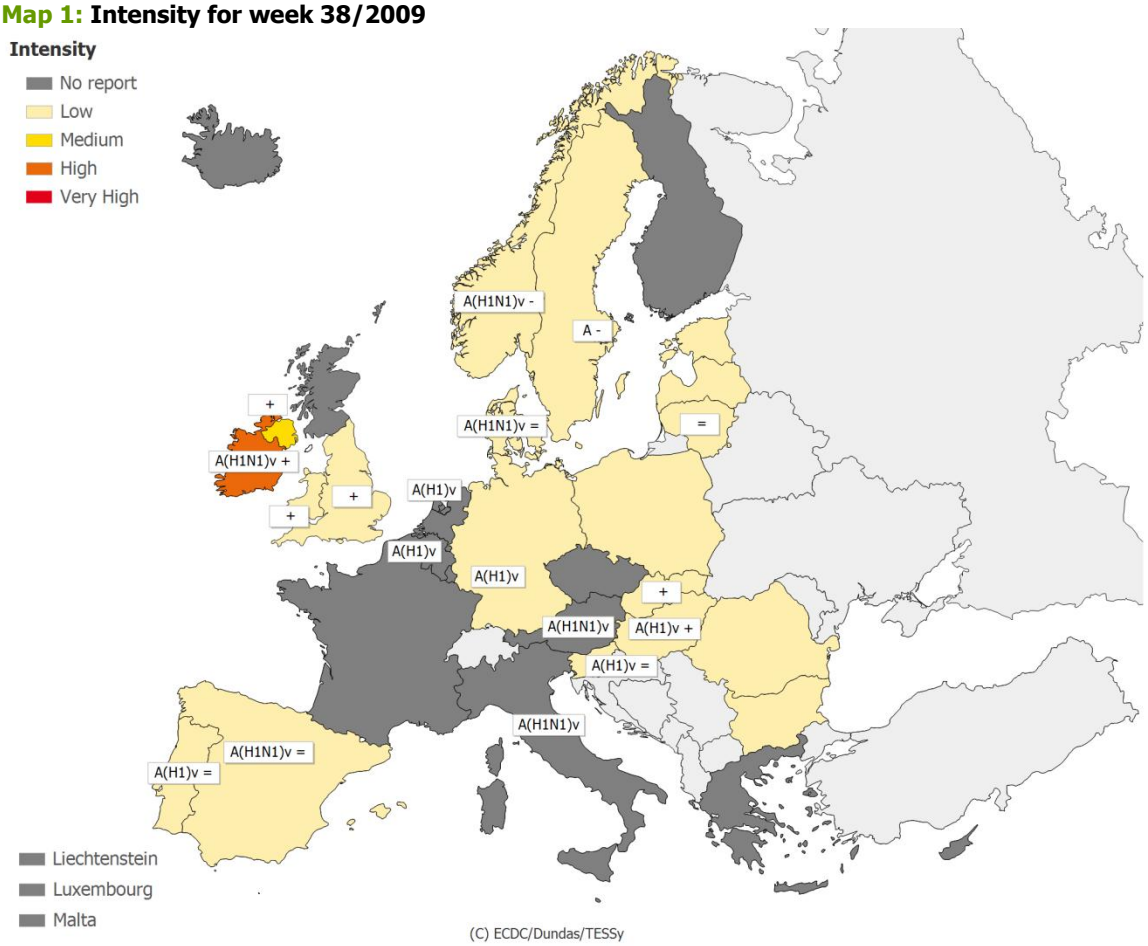
Mortality surveillance: No EURO MOMO data are available yet. For more information **click here.**

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)

This surveillance is based on nationally organised sentinel networks of physicians, mainly general practitioners (GPs), representing at least 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. At the national level, both numerator and denominator data are then reported to the European Surveillance System (TESSy) database and allow for a semi-quantitative assessment of intensity, geographic spread and trends of influenza activity (for definitions indicators, see legends to maps).

Map 1: Intensity for week 38/2009

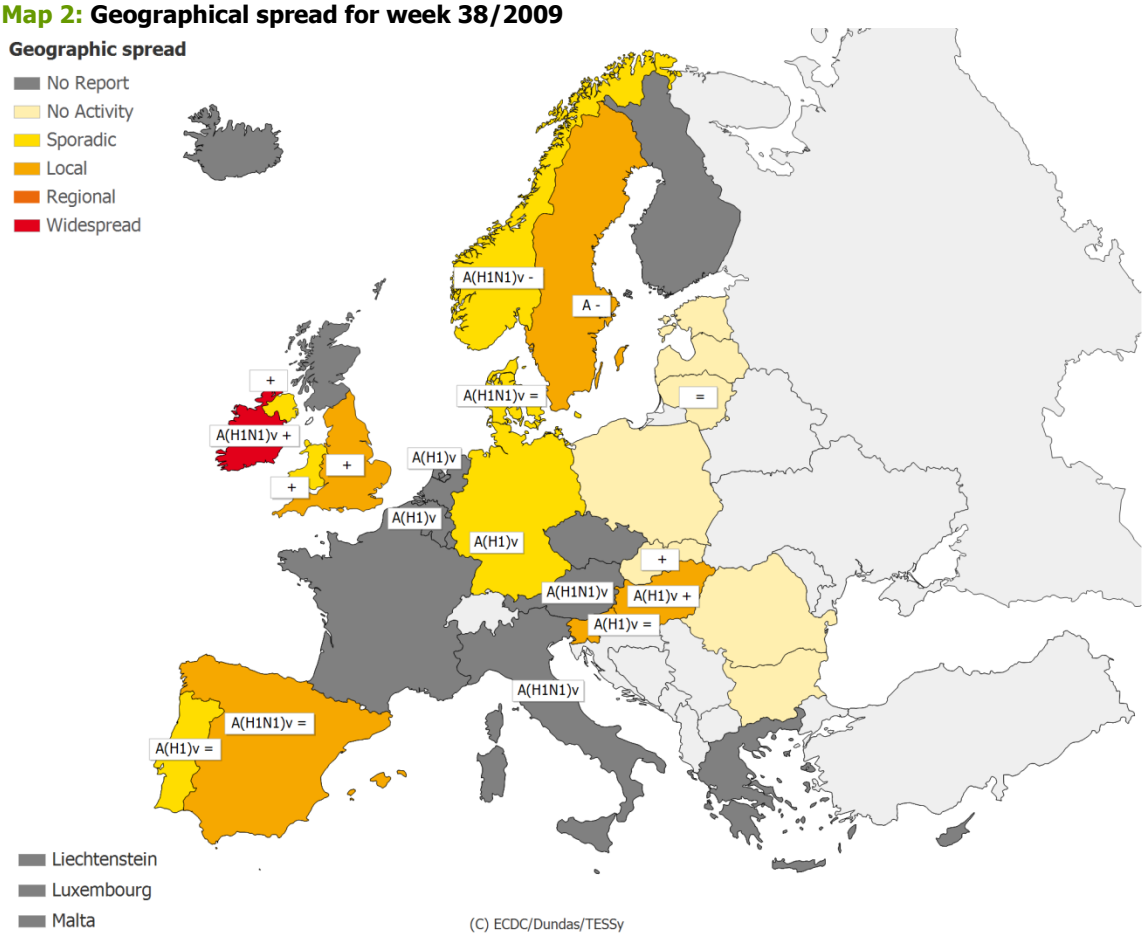


* A type/subtype is reported as dominant when > 40 % of all samples are positive for the type/subtype.

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 38/2009



* 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	Trend	Geographic spread	No. of sentinel swabs	Percentage positive *	Dominant Type	ILI per 100.000	ARI per 100.000
Austria				7	0.0	A(H1N1)v		
Belgium				142	9.2	A(H1)v		
Bulgaria	Low	Decreasing	No activity	0	-	None		372.8
Denmark	Low	Stable	Sporadic	1	0.0	A(H1N1)v	40.0	0.0
Estonia	Low	Increasing	No activity	0	-	None	4.2	295.9
Germany	Low	Stable	Sporadic	56	8.9	None		685.1
Greece				0	-	None		
Hungary	Low	Increasing	Local	81	18.5	A(H1)v	116.1	
Ireland	High	Increasing	Widespread	79	25.3	A(H1N1)v	72.2	
Italy				0	-	A(H1N1)v		
Latvia	Low	Increasing	No activity	0	-	None	0.0	480.2
Lithuania	Low	Stable	No activity		-		0.3	338.3
Luxembourg				43	11.6	A(H1)v		
Netherlands				23	8.7	A(H1)v		
Norway	Low	Decreasing	Sporadic	13	0.0	A(H1N1)v	159.0	
Poland	Low	Increasing	No activity	18	0.0	None	28.7	
Portugal	Low	Stable	Sporadic	2	0.0	A(H1)v	28.8	
Romania	Low	Increasing	No activity	22	0.0	None	1.0	520.4
Slovakia	Low	Increasing	No activity		-		107.5	1,044.6
Slovenia	Low	Stable	Local	14	7.1	A(H1)v	10.8	1,005.1
Spain	Low	Stable	Local	250	20.8	A(H1N1)v	52.2	
Sweden	Low	Decreasing	Local	78	6.4	A	11.9	
UK - England	Low	Increasing	Local		-		16.2	286.2
UK - Northern Ireland	Medium	Increasing	Sporadic		-		134.0	354.2
UK - Wales	Low	Increasing	Sporadic		-		13.9	
Europe				**829**	**14.2**			

* Based on sentinel data

Link to virological graphs

Link to epidemiological graphs

Weekly analysis- epidemiology

In week 38, 17 countries reported epidemiological data. For the intensity indicator—national network levels for ILI and/or ARI— Ireland reported high intensity and the UK (Northern Ireland) reported medium intensity. All other countries reported low intensity. For the geographic spread indicator, Ireland reported widespread activity, whereas Hungary, Slovenia, Spain and the UK (England) reported local activity. The remaining countries reported sporadic or no activity. In the two countries (Ireland and UK (Northern Ireland)) which reported levels of influenza activity above baseline, a consistently increasing trend is being observed since week 36.

As of week 38/2009, influenza activity above baseline levels has been reported in the following locations: the UK (England) week 27/2009, Ireland week 30/2009, the UK (Northern Ireland) week 31/2009, Norway week 34/2009, Sweden week 35/2009 and Malta week 36/2009. 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 medium in week 36 and rose to high in week 38. In most locations where influenza activity rose above baseline levels this summer, the most affected age group included those aged 15–64 years. Only in the UK (England) and Malta did children younger than 15 years have the highest ILI consultation rates. Data on activity reported in August is, however, difficult to interpret due to seasonal holidays affecting routine surveillance functions.

Virological surveillance

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**.

Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 16–38/2009

	Current Week		Season	
Virus type/subtype	Sentinel	Non-sentinel	Sentinel	Non-sentinel
Influenza A	118	461	114930	234558
A (pandemic H1N1)	113	445	3389	70984
A (subtyping not performed)	5	16	32506	98326
A (not subtypable)	0	1	0	170
A (H3)	0	0	75155	60681
A (H1)	0	0	3880	4459
Influenza B	0	0	26396	31043
Total	**118**	**462**	**141422**	**265843**

Figure 1: Number of sentinel specimens positive for influenza, by type, subtype and by week of report—weeks 16–38/2009

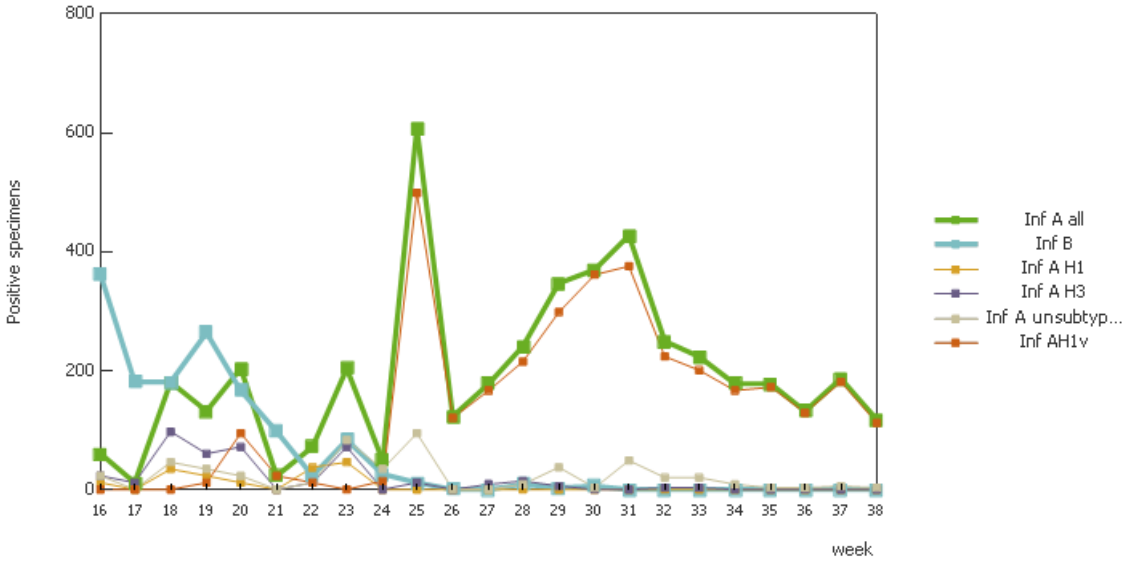


Figure 2: Number of non-sentinel specimens positive for influenza by type, subtype and week of report

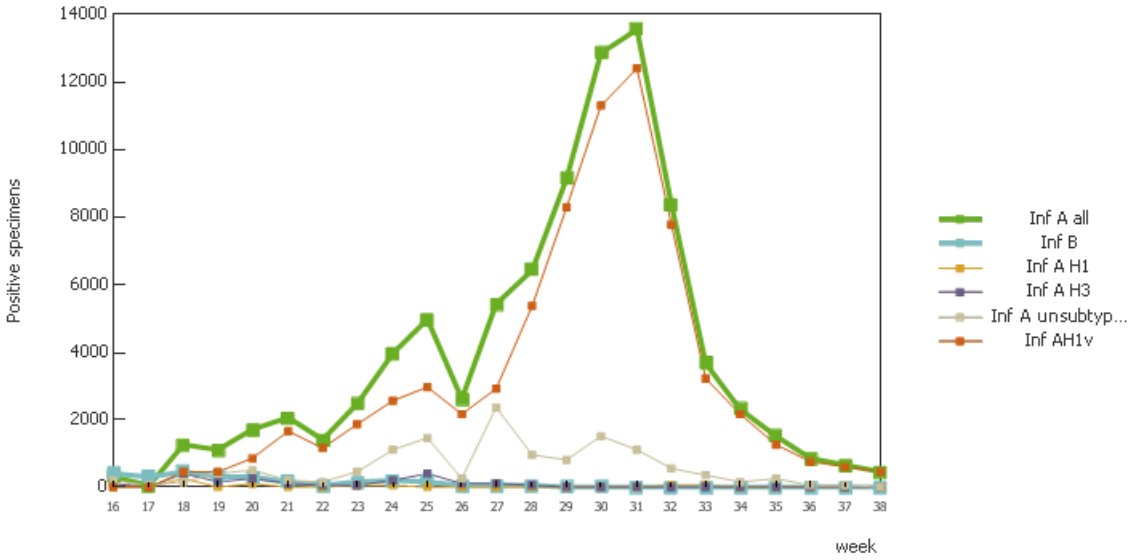


Figure 3: Proportion of sentinel samples positive for influenza–weeks 16-38

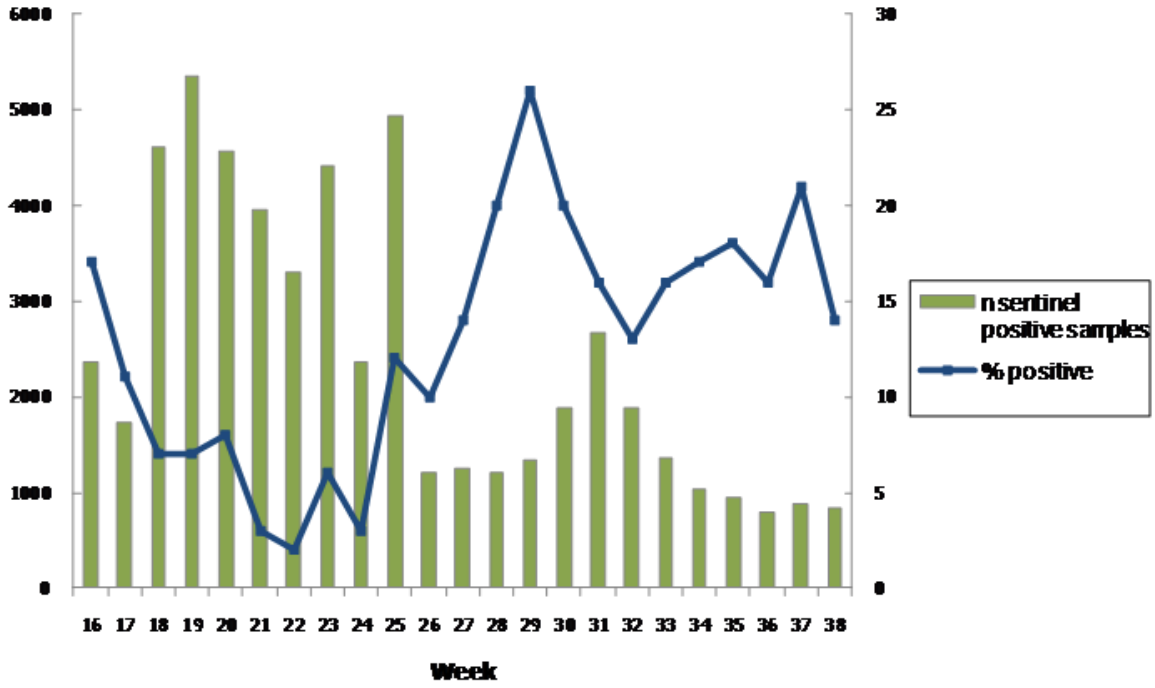


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates since week 16/2009

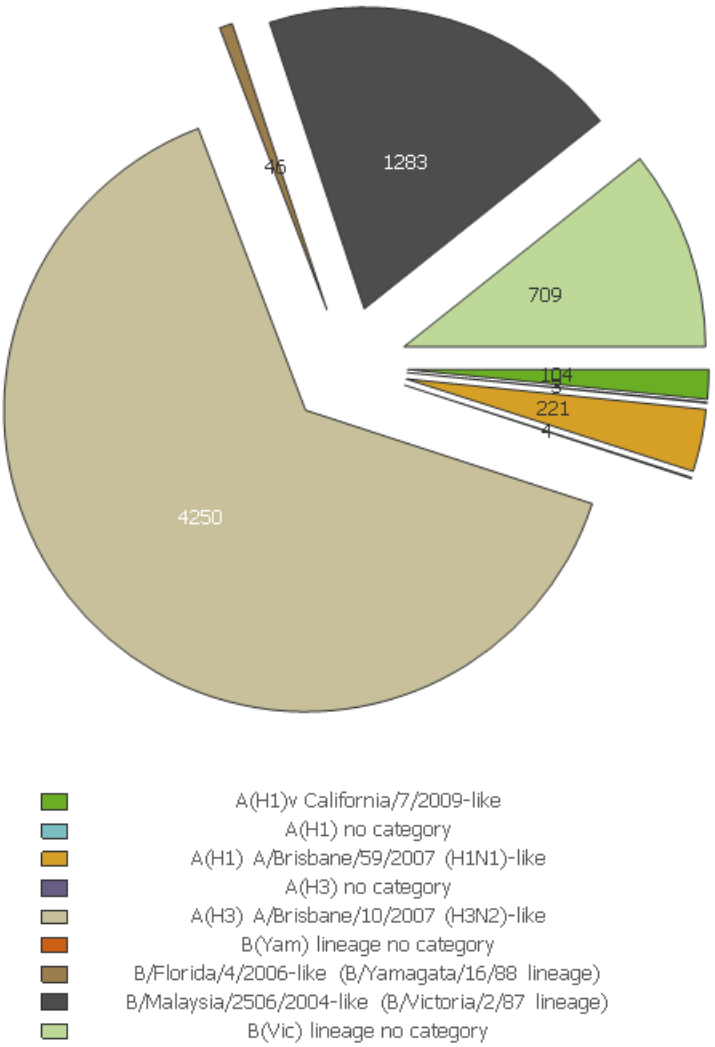


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2008–38/2009

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		

Weekly analysis—virology

In week 38, 20 countries reported virological data. Sentinel physicians collected 829 respiratory specimens, of which 118 (14%) were positive for influenza virus (Table 1). In addition, 461 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 13 692 influenza viruses reported from week 40/2008 to week 38/2009, 9253 (68%) were reported as A/Brisbane/10/2007 (H3N2)-like, 570 (4%) as A/Brisbane/59/2007 (H1N1)-like, 104 (<1%) as B/Florida/4/2006-like (B/Yamagata/16/88 lineage), 3684 (27%) as B/Malaysia/2506/2004-like or B/Brisbane/60/2008-like (B/Victoria/2/87 lineage) and 281 (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.

Aggregate numbers of pandemic (H1N1) 2009 cases and deaths

Aggregate numbers of both probable and laboratory-confirmed cases of pandemic influenza and deaths due to pandemic influenza are reported by countries still collecting these data.

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	-	-	269	0
Denmark	-	-	562	0
Estonia	1	0	68	0
Finland	-	-	222	0
France	-	-	464	0
Germany	-	-	16835	0
Greece	-	-	1839	1
Hungary	-	-	151	1
Iceland	-	-	165	0
Ireland	157	0	1172	2
Italy	-	-	618	0
Latvia	-	-	27	0
Lithuania	-	-	51	0
Luxembourg	-	-	0	0
Malta	-	-	390	2
Netherlands	100	4	1121	5
Norway	69	1	1000	2
Poland	-	-	157	0
Portugal	-	-	2624	0
Romania	7	0	326	0
Slovakia	-	-	125	0
Slovenia	-	-	217	0
Spain	-	-	1308	4
Sweden	107	0	1380	2
United Kingdom	103	0	11335	31
Total	**544**	**5**	**43243**	**50**

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.

Weekly analysis—cases and deaths

In week 38, seven countries reported 544 newly diagnosed probable and confirmed cases of influenza A(H1N1)v and five deaths. Four of the five deaths were reported by the Netherlands and one by Norway. The cumulative number of reported cases since the beginning of the pandemic in EU/EEA Member States totals 43 243, of which 50 are known to have died.

Differences compared to the ECDC daily pandemic H1N1 2009 update are due to unsynchronized reporting related to the ongoing transition to TESSy.

Hospital surveillance (SARI)

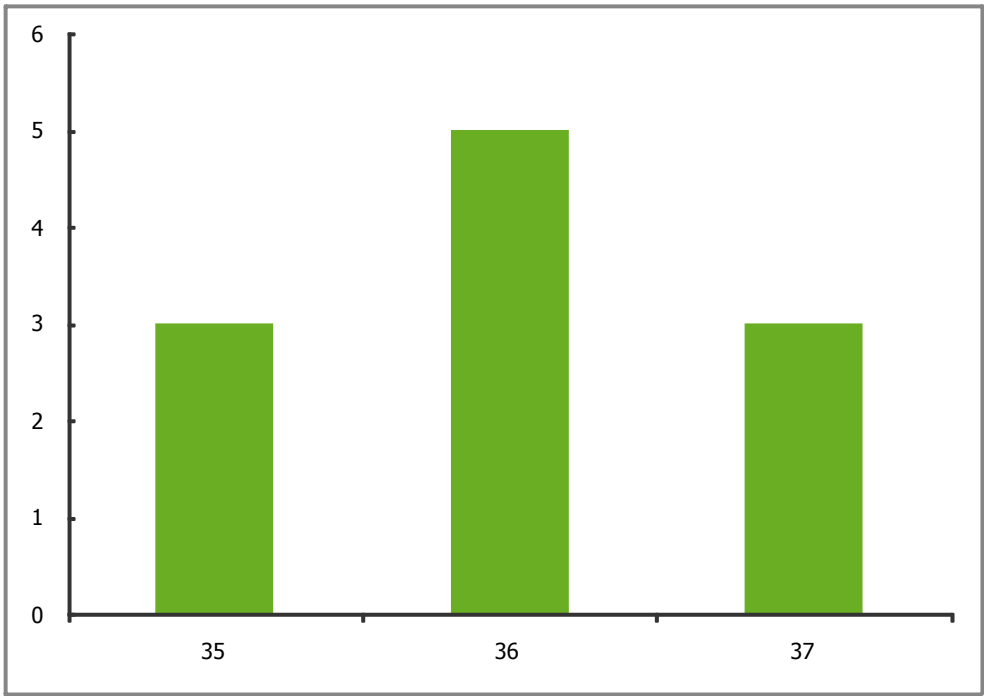
Weekly analysis – SARI

A number of Member States carry out hospital-based surveillance of severe acute respiratory infection (SARI) in all hospitals 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.

Table 5: Number of SARI cases by week of onset, as of week 38/2009

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		11	
Total					11	

Figure 5: Number of SARI cases by date of onset, as of week 38/2009



Weekly analysis -SARI

In week 38, four cases of SARI and no SARI-related deaths were reported by the Netherlands. A total of 11 SARI cases have been reported to date by the Netherlands. Of the five cases for whom detailed epidemiological information was available, three were children younger than 18 years of age and one case was older than 60 years of age. Three cases required ICU admission, one of whom was not reported to be suffering from any underlying condition.

Treatment with oseltamivir was reported for one (25%) out of four SARI patients so far.

Mortality surveillance

Weekly all-cause mortality in Europe is monitored by the EURO MOMO project, a project coordinated by the Statens Serum Institut in Denmark. All-cause mortality has been shown to reflect influenza severity. For this week's updated report click here…

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.

In week 38, no qualitative indicator data were reported as reliable numbers are available from routine surveillance sources.