SURVEILLANCE REPORT

Weekly influenza surveillance overview

18 September 2009

Main surveillance developments in week 37/2009

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

- Only three of the 20 countries reported ILI/ARI activity above their baseline levels
- Ninety-six per cent of virus detections from sentinel physicians during week 37 were influenza A(H1N1)v virus
- Seven SARI cases reported by the Netherlands.

Sentinel surveillance of influenza like illness (ILI)/ acute respiratory illness (ARI): Ireland, Sweden and the UK (Northern Ireland) reported medium activity this week and sporadic or local geographical spread. All other reporting European countries continue to see low activity. For more information **click here.**

Virological surveillance: The proportion of influenza-positive sentinel samples was 19.5%, of which 96% were influenza A(H1N1)v. For more information **click here.**

Aggregate numbers of pandemic H1N1 2009: Four countries reported 207 newly diagnosed probable and confirmed cases of influenza A(H1N1)v. Norway reported one death. For more information **click here.**

Hospital surveillance of severe acute respiratory infection (SARI): Seven 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.**

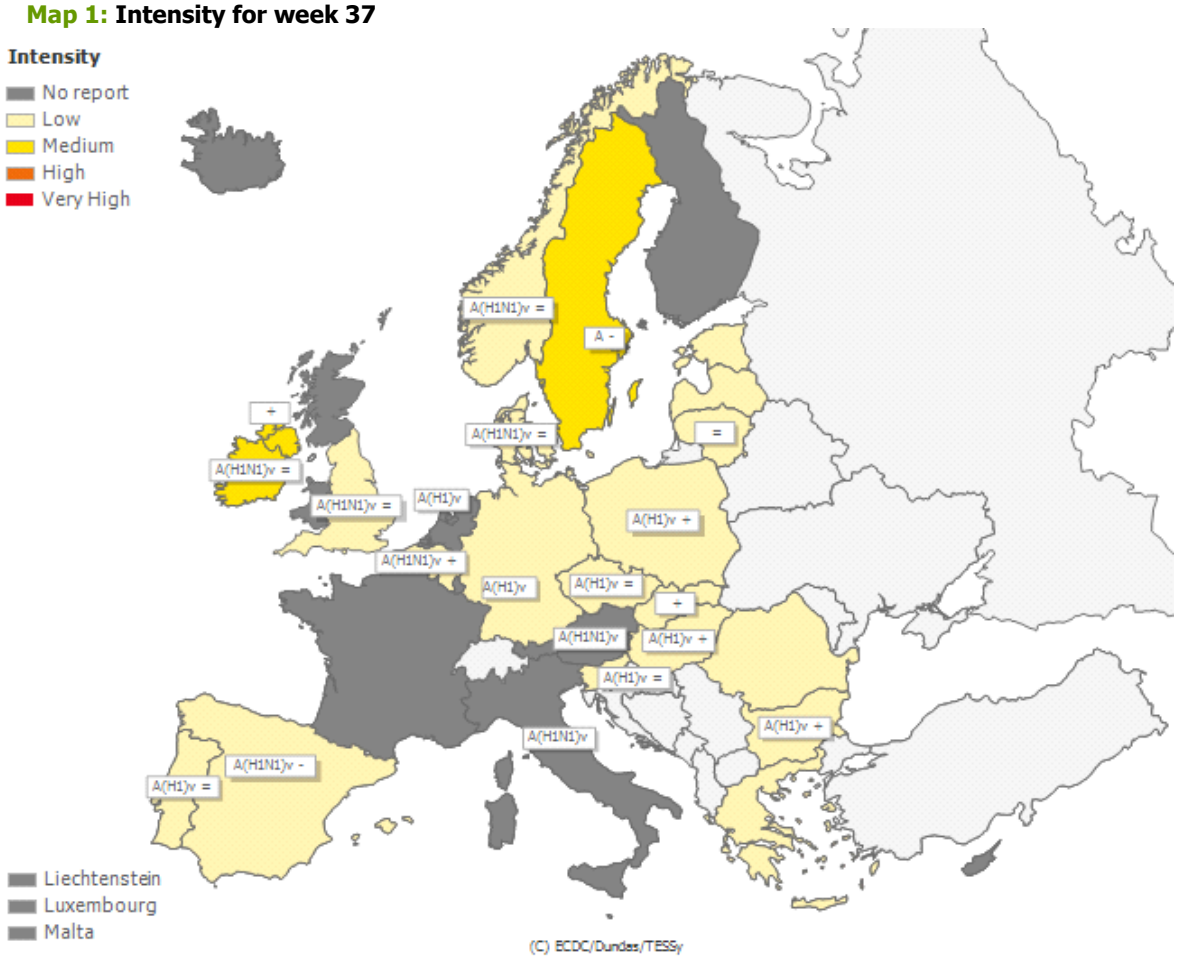
Qualitative reporting: No qualitative indicator data are available yet given the normal functioning of the routine surveillance systems. For more information **click here.**

© European Centre for Disease Prevention and Control, Stockholm, 2009

Sentinel surveillance (ILI/ARI)

This surveillance is based on nationally organised sentinel networks of physicians, mostly 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. From the 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 trends of influenza activity (for definition indicators, see legend).

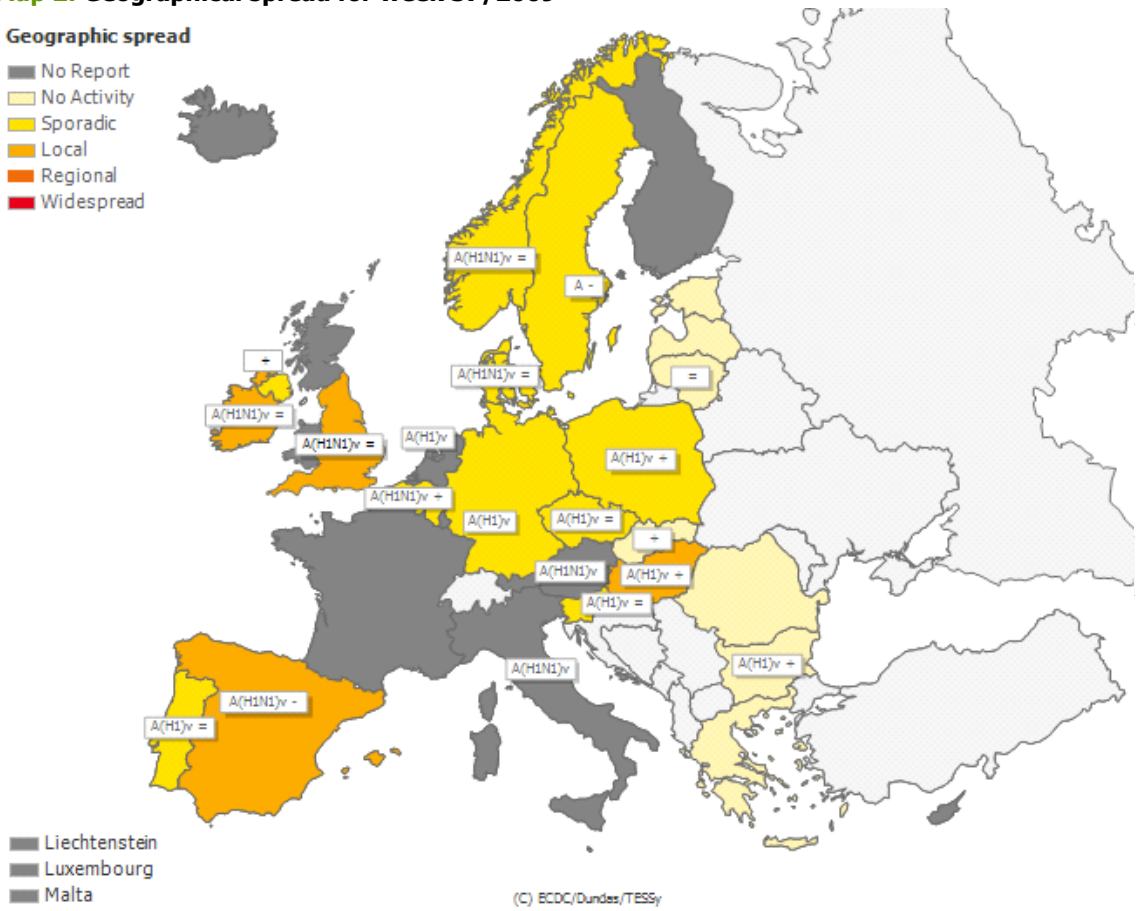
Map 1: Intensity for week 37



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 37/2009



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				5	0.0	A(H1N1)v		
Belgium	Low	Increasing	Sporadic	138	4.4	A(H1N1)v	106.8	1,131.9
Bulgaria	Low	Increasing	No activity		-	A(H1)v		463.1
Czech Republic	Low	Stable	Sporadic	54	1.9	A(H1)v	8.5	459.7
Denmark	Low	Stable	Sporadic	1	0.0	A(H1N1)v	55.6	0.0
Estonia	Low	Increasing	No activity	3	0.0	None	1.2	165.0
Germany	Low	Stable	Sporadic	44	13.6	None		584.1
Greece	Low	Stable	No activity	0	-	None	28.8	
Hungary	Low	Increasing	Local	64	129.7	A(H1)v	41.1	
Ireland	Medium	Stable	Local	48	8.3	A(H1N1)v	37.9	
Italy				0	-	A(H1N1)v		
Latvia	Low	Stable	No activity	1	100.0	None	0.0	217.8
Lithuania	Low	Stable	No activity		-		0.2	181.2
Luxembourg				28	7.1	A(H1)v		
Netherlands				35	14.3	A(H1)v		
Norway	Low	Stable	Sporadic	28	3.6	A(H1N1)v	213.3	
Poland	Low	Increasing	Sporadic	1	0.0	A(H1)v	13.4	0.0
Portugal	Low	Stable	Sporadic	0	-	A(H1)v	15.7	
Romania	Low	Stable	No activity	12	0.0	None	1.5	479.3
Slovakia	Low	Increasing	No activity		-		76.4	762.9
Slovenia	Low	Stable	Sporadic	7	14.3	A(H1)v	0.0	697.7
Spain	Low	Decreasing	Local	204	18.1	A(H1N1)v	42.0	
Sweden	Medium	Decreasing	Sporadic	99	12.1	A	27.3	
UK - England	Low	Stable	Local	54	3.7	A(H1N1)v	10.7	205.2
UK - Northern Ireland	Medium	Increasing	Sporadic		-		107.9	289.1
Europe				**826**	**19.5**			

* Based on sentinel data

Link to virological graphs

Link to epidemiological graphs

Weekly analysis

In week 37, 20 countries reported epidemiological data. For the intensity indicator—national network levels for ILI and/or ARI— Ireland, Sweden and the UK (Northern Ireland) reported medium activity and all other countries reported low activity. For the geographic spread indicator, none of the countries reported widespread activity, whereas Hungary, Ireland, Spain and the UK (England) reported local activity. The remaining countries reported sporadic or no activity.

As of week 37/2009, 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. Influenza activity remained at medium levels in week 36 in Ireland, Norway and Sweden, but appeared to be increasing in Ireland and Sweden. 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 16-37/2009

	Current Week		Season	
Virus type/ subtype	Sentinel	Non-sentinel	Sentinel	Non-sentinel
Influenza A	160	624	114770	234019
A (pandemic H1N1)	154	565	3232	70423
A (subtyping not performed)	6	56	32504	98356
A (not subtypable)	0	0	0	169
A (H3)	0	0	75154	60671
A (H1)	0	3	3880	4461
Influenza B	1	3	26396	31043

Figure 1: Number of sentinel specimens positive for influenza, by type, subtype and by week of report—weeks 16–37/2009

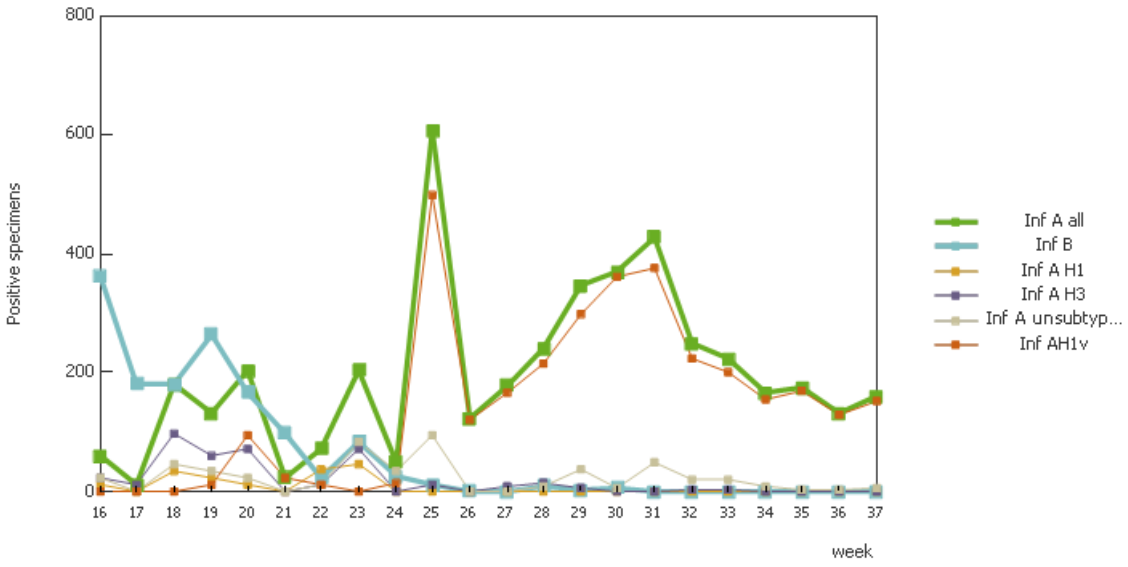


Figure 2: Number of non-sentinel specimens positive for influenza by type, subtype and week of report

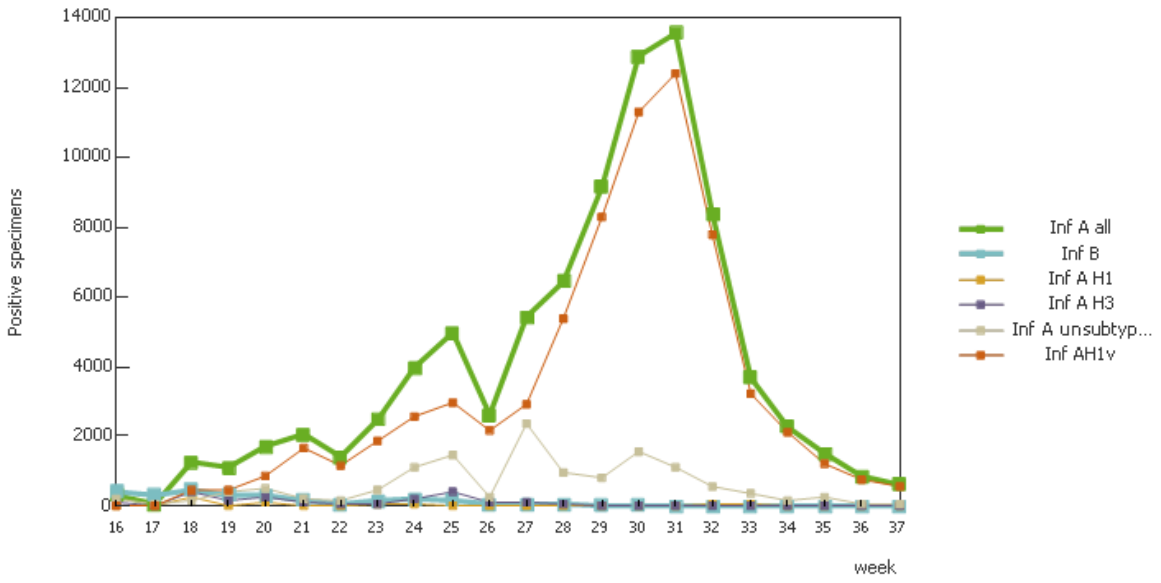


Figure 3: Proportion of sentinel samples positive for influenza–weeks 16–37

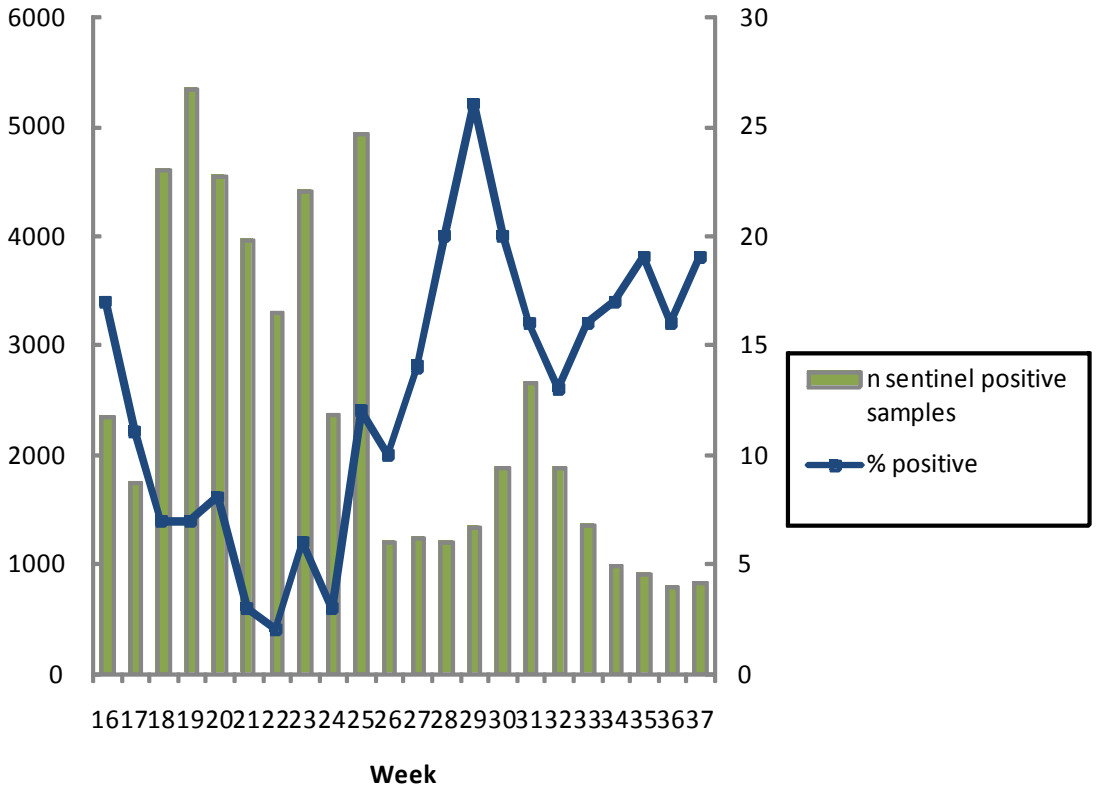


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates since week 16/2009

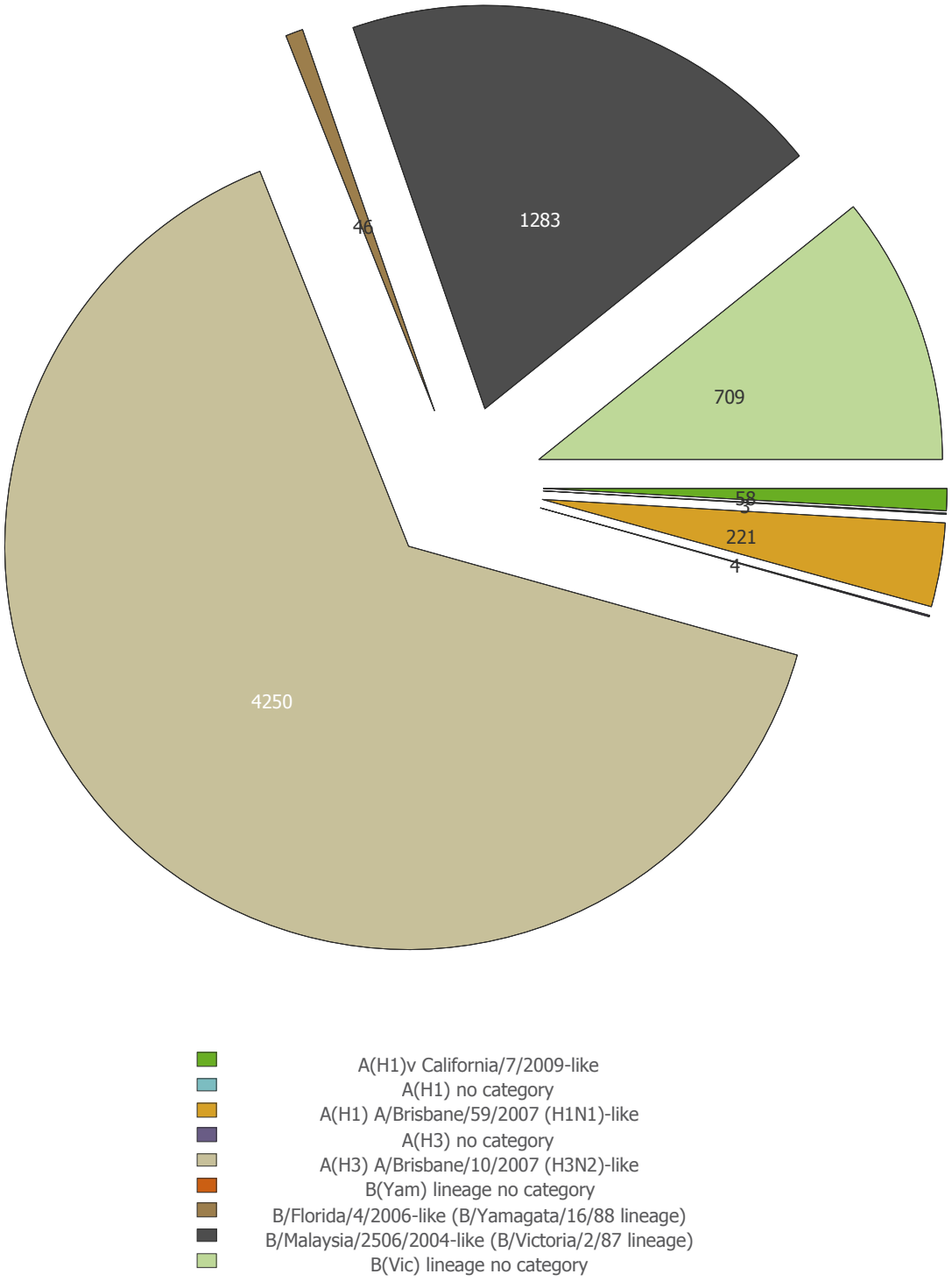


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2008–37/2009

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

In week 37, 21 countries reported virological data. Sentinel physicians collected 826 respiratory specimens, of which 161 (19%) were positive for influenza virus (Table 1). In addition, 627 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 source 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 oscillates thereafter between 15% and 20%.

Based on the antigenic and/or genetic characterisation of 11 809 influenza viruses reported from week 40/2008 to week 37/2009, 7 987 (68%) were reported as A/Brisbane/10/2007 (H3N2)-like, 484 (4%) as A/Brisbane/59/2007 (H1N1)-like, 95 (1%) as B/Florida/4/2006-like (B/Yamagata/16/88 lineage), 2 970 (25%) as B/Malaysia/2506/2004-like or B/Brisbane/60/2008-like (B/Victoria/2/87 lineage) and 273 (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 this 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	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.

Weekly analysis

In week 37, four countries reported 207 newly diagnosed probable and confirmed cases of influenza A(H1N1)v. Norway reported one death. The cumulative number of reported cases since the beginning of the pandemic in EU/EEA Member States totals 42 409, of which 44 have been fatal.

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)

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.

Table 5: Number of SARI cases by week of onset, as of week 37/2009

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		7	
Total					7	

Figure 5: Number of SARI cases by date of onset, as of week 37/2009

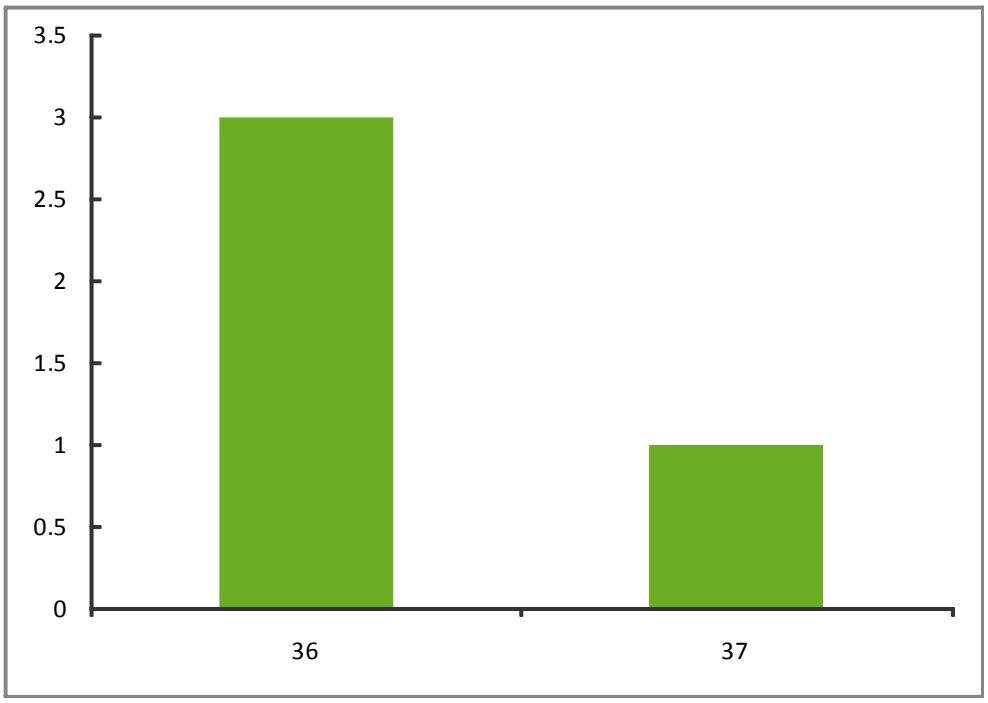


Table 6: Number of SARI cases by antiviral treatment and resistance, as of week 37/2009

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		1 (25.0 %)	
Unknown	4 (100.0 %)	1 (25.0 %)	4 (100.0 %)
None		2 (50.0 %)	
Total	4	4	4

Table 7: Number of SARI cases by underlying condition and age group, as of week 37/2009

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
Chronic heart disease	1 (100.0%)				
Chronic lung disease				1 (100.0%)	
No underlying condition		1 (100.0%)			1 (100.0%)

Table 8: Number SARI cases by complication and age group, as of week 37/2009

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
None		1 (100.0%)			1 (100.0%)
Other (please specify separately)	1 (100.0%)				
Unknown				1 (100.0%)	

Table 9: Number of SARI by underlying condition by level of care, as of week 37/2009

	ICU	Inpatient ward	Other	Unknown
Chronic heart disease	1 (50.0%)			
Chronic lung disease		1 (50.0%)		
No underlying condition	1 (50.0%)			
No underlying condition		1 (50.0%)		

Table 10: Number of SARI by underlying condition and level of respiratory support, as of week 37/2009

	Oxygen therapy	Ventilator support provided	Ventilator support necessary but not available	Respiratory support given unknown
Chronic heart disease		1 (100.0%)		
Chronic lung disease				
No underlying condition				

Weekly analysis

In week 37, seven cases and zero SARI-related deaths were reported by the Netherlands. Out of the four cases for whom detailed epidemiological information was available, two were children younger than 18 years of age and one was older than 60 years of age. Two cases (50%) had underlying conditions that put them at higher risk of severe influenza illness. Two cases required ICU admission, of which one was not reported to be suffering from any underlying condition.

Treatment with oseltamivir was reported for one (25%) out of four SARI patients (Table 7).

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…

In week 37, no mortality data was available through EURO MOMO.

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