SURVEILLANCE REPORT

Weekly influenza surveillance overview

09 October 2009

Main surveillance developments in week 40/2009

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

- Five EU countries (Belgium, Ireland, Malta, 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.
- Eleven countries reported increasing activity, compared to week 39/2009.

Sentinel surveillance of influenza like illness (ILI) / acute respiratory illness (ARI): Ireland reported high intensity activity and Belgium, Malta, Spain and the UK (Northern Ireland) reported medium intensity activity this week. Belgium, Ireland and the UK (England and Wales) reported widespread activity. Eleven countries reported increasing intensity activity compared to week 39/2009. For more information **click here.**

Virological surveillance: A total of 1 056 sentinel specimens were tested during week 40/2009, of which 23% were positive for influenza. All of the influenza type A 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 323 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 additional cases were reported in week 40/2009. 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 40/2009, 19 countries reported epidemiological data. For the intensity activity indicator—national network levels for ILI and/or ARI—Ireland reported high intensity activity and Belgium, Malta, Spain and the UK (Northern Ireland) reported medium intensity activity this week. All other countries reported low intensity activity.

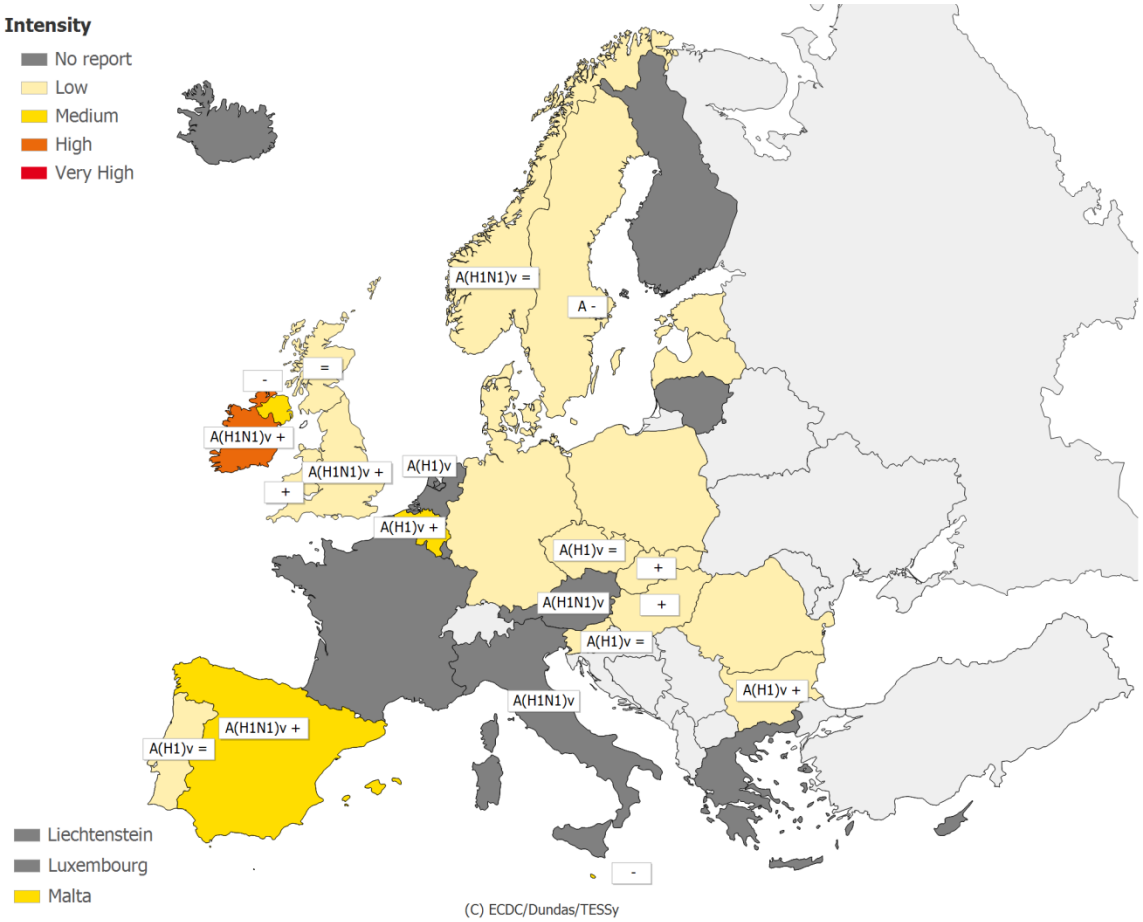
For the geographic spread indicator, Belgium, Ireland and the United Kingdom (England and Wales) reported widespread activity, Spain reported regional activity, four countries reported local and 13 reported sporadic or no activity. Eleven countries reported an increasing trend of influenza activity compared to week 39/2009.

For the definitions of the intensity activity and geographic spread indicators, click here.

As of week 40/2009, influenza activity above baseline levels has been reported in the following locations: the UK (England) experienced medium activity in week 26/2009 which then rose to high activity in weeks 28–30, decreasing to medium levels in week 32 and to low levels in week 33; Ireland experienced medium activity since week 30/2009 which then rose to high levels in week 38/2009; the UK (Northern Ireland) experienced medium activity since week 31/2009; Norway experienced medium activity since week 34/2009 decreasing to low levels in week 37; Sweden experienced medium activity since week 35/2009 which then decreased to low levels in week 38; Malta experienced medium activity since week 36/2009; Belgium and Spain both experienced medium activity since week 39/2009.

In most locations where influenza activity rose above baseline levels so far, the most affected age groups are 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. As of week 40/2009, sentinel systems start the traditional influenza surveillance season, which will allow for a better comparison with historical data.

Map 1: Intensity for week 40/2009

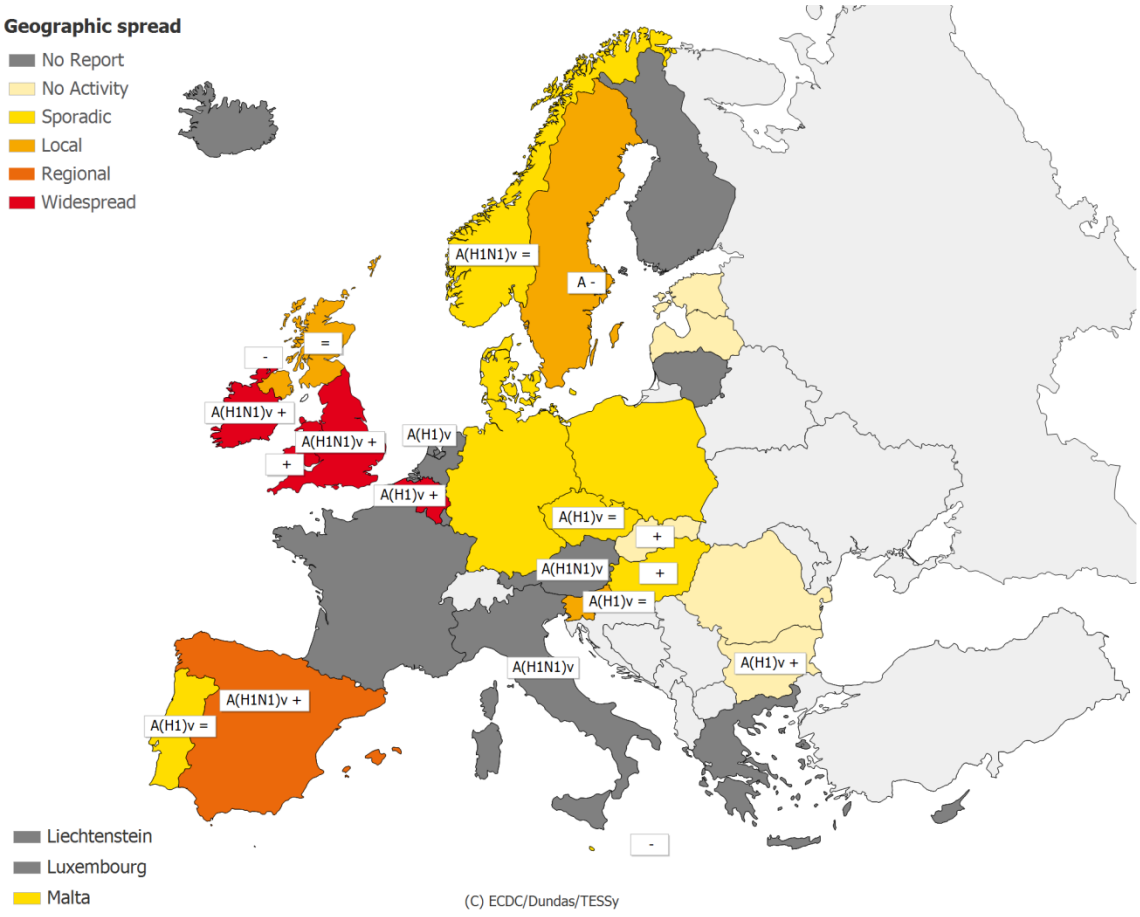


* A type/subtype is reported as dominant when > 40 % of all samples are positive for the type/subtype.

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: Geographic spread for week 40/2009



* 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				11	A(H1N1)v	0.0	-	-	Graphs	Graphs
Belgium	Medium	Widespread	Increasing	119	A(H1)v	31.1	176.7	1764.0	Graphs	Graphs
Bulgaria	Low	No activity	Increasing	0	A(H1)v	-	-	578.5	Graphs	Graphs
Czech Republic	Low	Sporadic	Stable	41	A(H1)v	2.4	19.4	769.3	Graphs	Graphs
Denmark	Low	Sporadic	Stable	2	None	0.0	72.4	0.0	Graphs	Graphs
Estonia	Low	No activity	Stable	0	None	-	1.6	258.7	Graphs	Graphs
Germany	Low	Sporadic	Stable	13	None	7.7	-	907.3	Graphs	Graphs
Greece				1	None	0.0	-	-	Graphs	Graphs
Hungary	Low	Sporadic	Increasing	-	-	-	139.2	-	Graphs	Graphs
Ireland	High	Widespread	Increasing	93	A(H1N1)v	36.6	88.4	-	Graphs	Graphs
Italy				0	A(H1N1)v	-	-	-	Graphs	Graphs
Latvia	Low	No activity	Increasing	1	None	0.0	0.0	662.6	Graphs	Graphs
Malta	Medium	Sporadic	Decreasing	-	-	-	7721.3	-	Graphs	Graphs
Netherlands				20	A(H1)v	10.0	-	-	Graphs	Graphs
Norway	Low	Sporadic	Stable	7	A(H1N1)v	14.3	91.5	-	Graphs	Graphs
Poland	Low	Sporadic	Increasing	6	None	0.0	44.1	0.0	Graphs	Graphs
Portugal	Low	Sporadic	Stable	1	A(H1)v	0.0	18.3	-	Graphs	Graphs
Romania	Low	No activity	Increasing	12	None	0.0	0.0	922.2	Graphs	Graphs
Slovakia	Low	No activity	Increasing	-	-	-	186.1	1552.1	Graphs	Graphs
Slovenia	Low	Local	Stable	20	A(H1)v	30.0	5.6	1063.4	Graphs	Graphs
Spain	Medium	Regional	Increasing	463	A(H1N1)v	30.9	94.7	-	Graphs	Graphs
Sweden	Low	Local	Decreasing	75	A	21.3	3.0	-	Graphs	Graphs
UK - England	Low	Widespread	Increasing	171	A(H1N1)v	4.0	26.3	400.6	Graphs	Graphs
UK - Northern Ireland	Medium	Local	Decreasing	-	-	-	166.3	338.2	Graphs	Graphs
UK - Scotland	Low	Local	Stable	-	-	-	29.0	243.9	Graphs	Graphs
UK - Wales	Low	Widespread	Increasing	-	-	-	53.5	-	Graphs	Graphs
Europe				1056		23.3				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 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 trend of influenza activity.

Virological surveillance

Weekly analysis - virology

In week 40/2009, 20 countries reported virological data. Sentinel physicians collected 1056 respiratory specimens, of which 246 (23%) were positive for influenza virus (Table 1). In addition, 778 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 25%.

Based on the antigenic and/or genetic characterisation of 6876 influenza viruses reported from week 40/2008 to week 40/2009, 4784 (70%) were reported as A/Brisbane/10/2007 (H3N2)-like, 250 (4%) as A/Brisbane/59/2007 (H1N1)-like, 57 (<1%) as B/Florida/4/2006-like (B/Yamagata/16/88 lineage), 1400 (20%) as B/Malaysia/2506/2004-like or B/Brisbane/60/2008-like (B/Victoria/2/87 lineage) and 385 (6%) 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 remain very rare.

Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 16–40/2009

	Current Week		Season	
Virus type/subtype	Sentinel	Non-sentinel	Sentinel	Non-sentinel
Influenza A	245	772	4974	23457
A (pandemic H1N1)	234	677	3853	15969
A (subtyping not performed)	11	93	550	7087
A (not subtypable)	0	0	0	0
A (H3)	0	2	399	293
A (H1)	0	0	172	108
Influenza B	1	6	1421	366
Total Influenza	**246**	**778**	**6395**	**23823**

Figure 1: Number of sentinel specimens positive for influenza, by type, subtype and week of report, weeks 16-40/2009

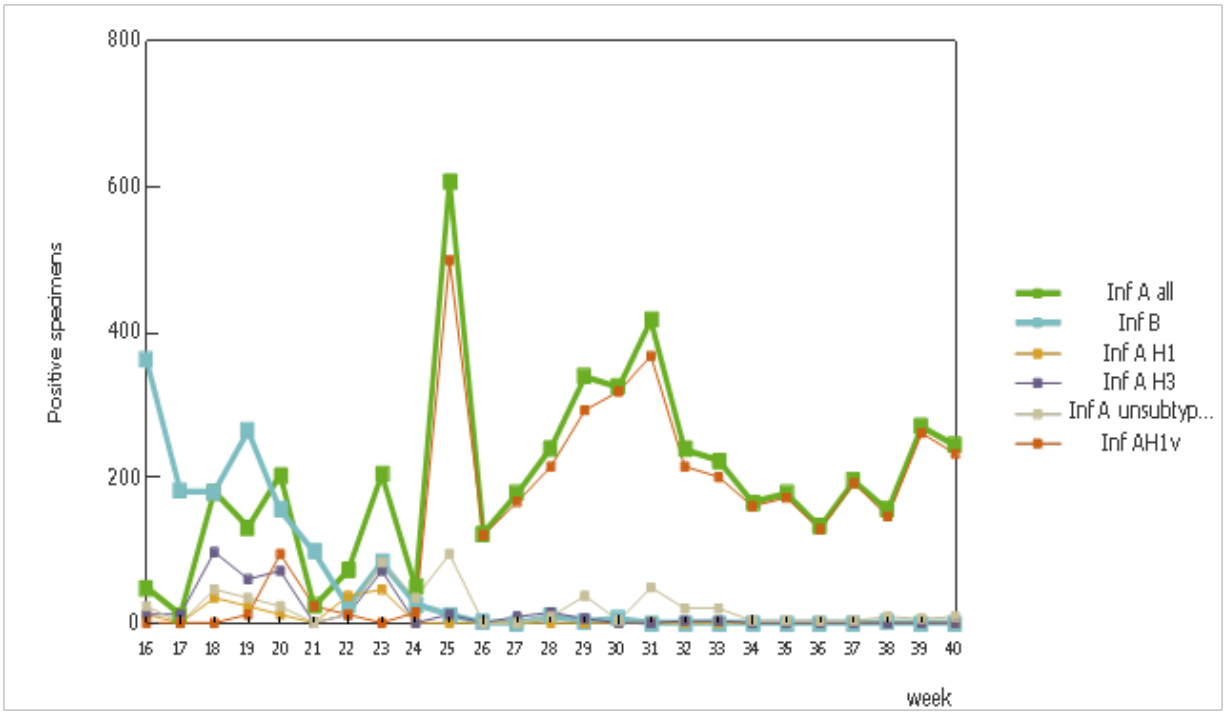


Figure 2: Number of non-sentinel specimens positive for influenza by type, subtype and week of report, weeks 16-40/2009

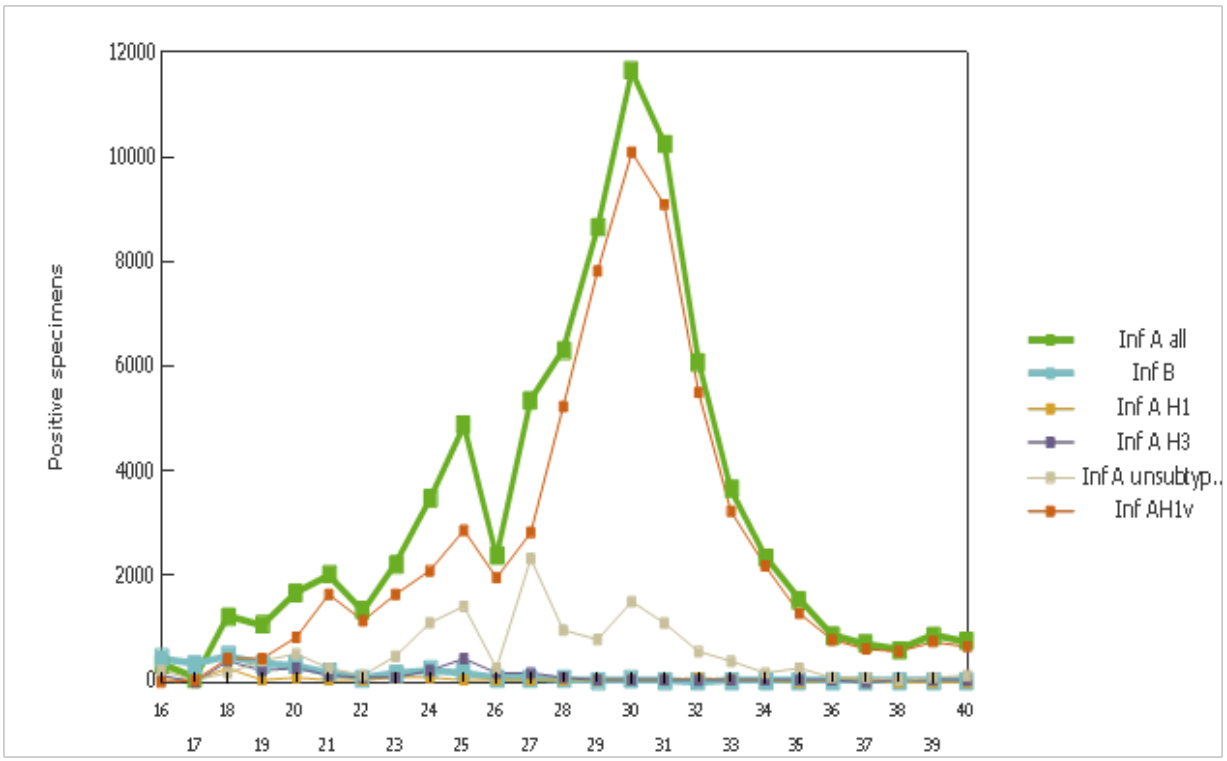


Figure 3: Proportion of sentinel samples positive for influenza, weeks 16-40 / 2009

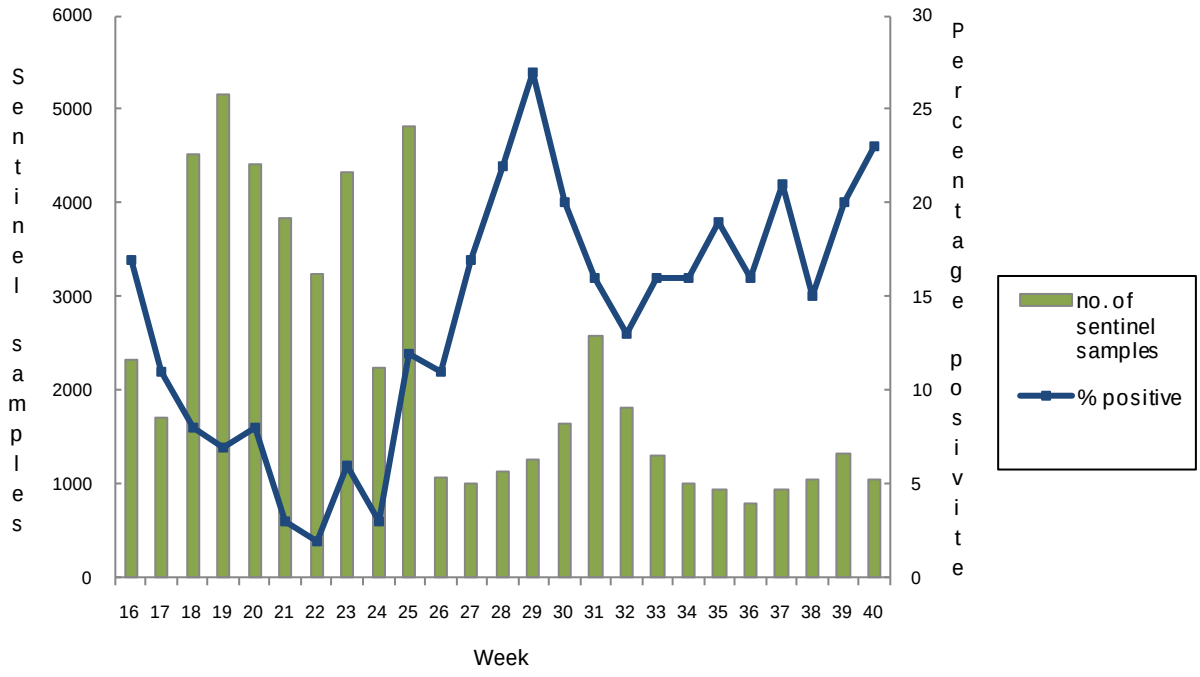


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates since week 40, 2008

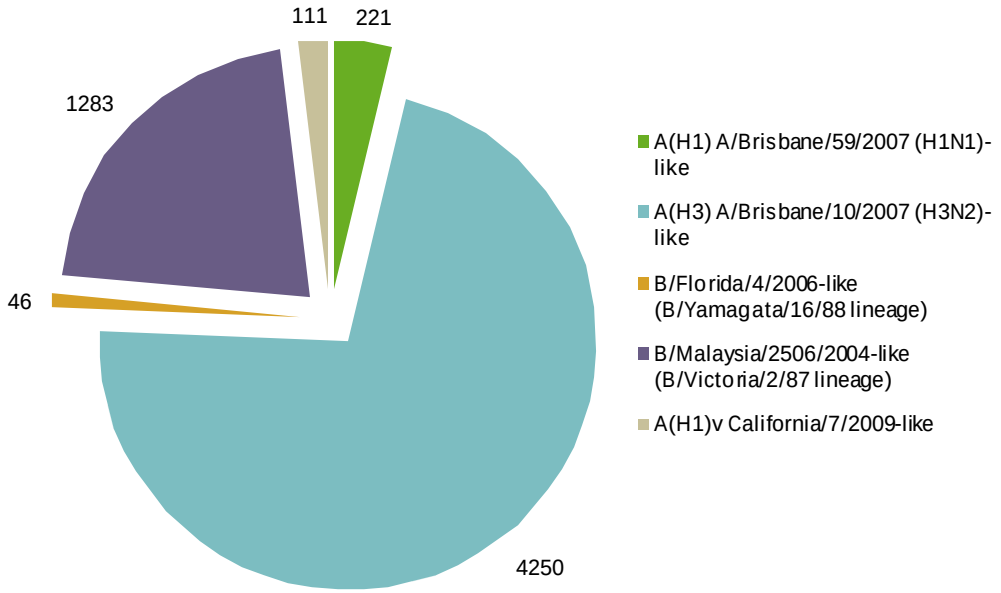


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2008–40/2009

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 40/2009, four countries reported 323 newly diagnosed probable and confirmed cases of influenza A(H1N1) and one death was reported by Ireland. The cumulative number of reported cases since the beginning of the pandemic in EU/EEA Member States totals 44068, of which 56 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

	Current week		Cumulate	
Country	Cases	Death	Cases	Death
Austria	-	-	330	0
Belgium	-	-	126	0
Bulgaria	-	-	72	0
Cyprus	-	-	297	0
Czech Republic	4	0	273	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	263	1	1613	4
Italy	-	-	618	0
Latvia	-	-	27	0
Lithuania	-	-	51	0
Luxembourg	-	-	0	0
Malta	-	-	390	2
Netherlands	-	-	1121	4
Norway	-	-	1064	2
Poland	0	0	165	0
Portugal	-	-	2624	0
Romania	4	0	336	0
Slovakia	-	-	125	0
Slovenia	-	-	217	0
Spain	-	-	1308	4
Sweden	52	0	1491	2
United Kingdom	-	-	11514	36
Total	**323**	**1**	**44068**	**56**

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

As of week 40/2009, three more cases of SARI were reported by the Netherlands. A total of 19 SARI cases have been reported to date by the Netherlands. Of the three cases reported during week 40/2009, two had the onset of disease in week 39 and one in week 37.

Table 5: Number of SARI cases, as of week 40/2009

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		19	
Total					19	

Figure 5: Number of SARI cases by date of onset, as of week 40/2009

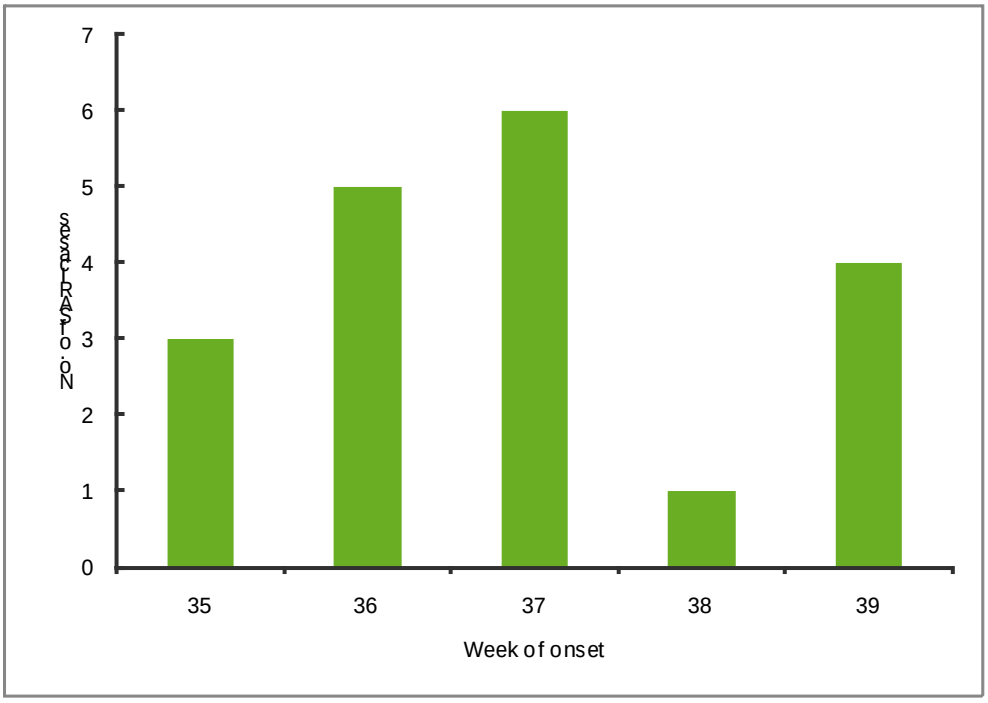


Table 6: Number of SARI cases by influenza type and subtype, as of week 40/2009

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)		19 (100.0 %)
A(subtyping not performed)		
A(H3)		
A(H1)		
A(H5)		
Influenza B		
Unknown		
Total		19

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.