

SURVEILLANCE REPORT

Weekly influenza surveillance overview

30 October 2009

Main surveillance developments in week 43/2009

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

- The number of countries with medium to very high intensity influenza activity continues to increase. Seventeen out of 27 countries report a rising trend.
- In sentinel samples, the proportion of influenza-like illness that tested positive for influenza has risen to 40%—a remarkably high percentage.
- Among positive sentinel isolates, influenza A(H1N1)v accounts for 82%.
- In 18–59 year-old SARI patients, females were overrepresented.
- In almost 40% of reported SARI cases, no underlying condition was identified.

Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory illness (ARI): This week Iceland and Ireland reported very high levels of intensity, Sweden and the UK (Northern Ireland) reported high intensity and nine countries reported medium activity. Eight countries reported widespread activity and five reported regional activity. For more information [click here](#).

Virological surveillance: Sentinel physicians collected 2 375 respiratory specimens, of which 965 (41%) were positive for influenza virus. Influenza A(H1N1)v virus accounted for 82% of all influenza-positive sentinel and non-sentinel specimens. For more information [click here](#).

Aggregate numbers of influenza A(H1N1)v: Czech Republic, Iceland, Italy, the Netherlands and Norway reported a total of eight deaths due to influenza A(H1N1)v. For more information [click here](#).

Hospital surveillance of severe acute respiratory infection (SARI): One hundred and thirty-nine SARI cases were reported, of which fifty-three (38%) had no known underlying medical condition. For more information [click here](#).

Qualitative reporting: No qualitative indicator data are available yet. For more information [click here](#).

Sentinel surveillance (ILI/ARI)

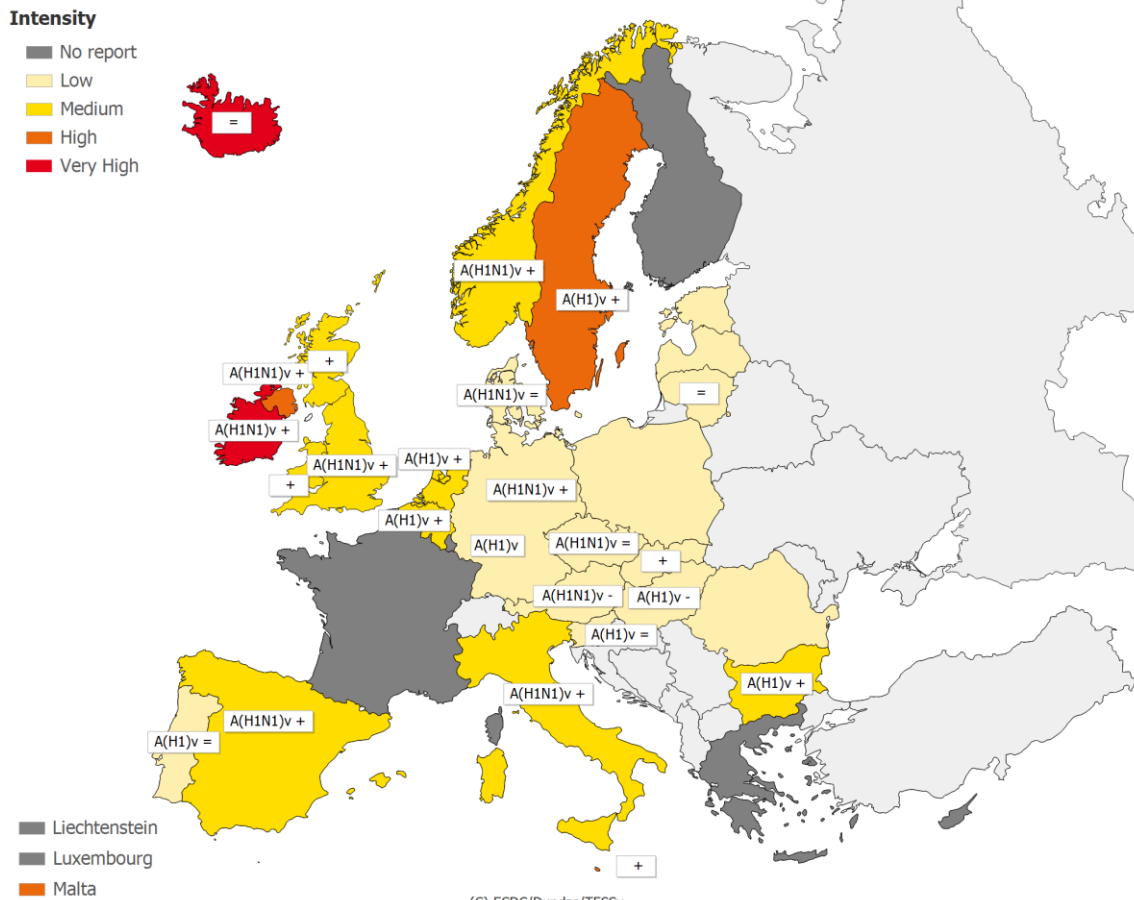
Weekly analysis – epidemiology

For week 43/2009, 27 countries reported epidemiological data. For the activity intensity indicator—national network levels for ILI and/or ARI—Iceland and Ireland reported very high intensity while Malta, Sweden and the UK (Northern Ireland) reported high activity. The following countries reported medium activity: Belgium, Bulgaria, Italy, the Netherlands, Norway, Spain and the UK (England, Scotland and Wales). All other countries reported low intensity.

For the geographic spread indicator, an increase was noted from the previous week, with the following countries reporting widespread activity: Belgium, Iceland, Ireland, the Netherlands, Norway, Spain and the UK (England and Wales). Austria, Germany, Malta, Sweden and the UK (Scotland) reported regional activity. All other countries reported sporadic or no activity. Seventeen countries reported an increasing trend of influenza activity compared to twelve in the previous week; nine countries reported low or no activity without any signs of an increasing trend. For the definitions of the intensity and geographic spread indicators, [click here](#).

From week 40/2009 to week 43/2009, influenza activity above baseline levels was reported in 13 countries, with 12 of these still seeing an increasing trend in week 43. In most countries where influenza activity rose above baseline levels to date, the most affected age group includes those younger than 15 years of age.

Map 1: Intensity for week 43/2009

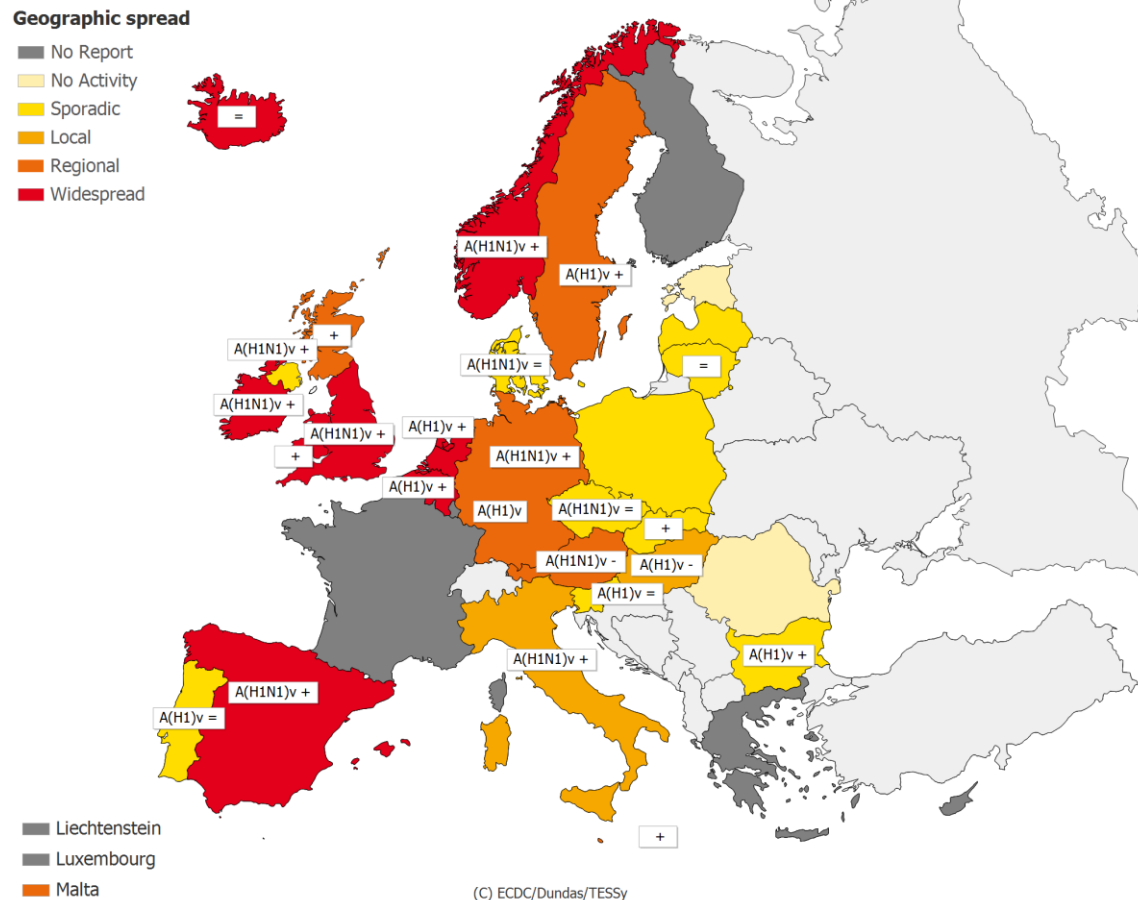


* A type/subtype is reported as dominant when > 40 % of all samples are positive for the type/subtype.

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(H1)v	Type A, Subtype H1v
		A(H1N1)v	Type A, Subtype H1N1v

Map 2: Geographic spread for week 43/2009



* 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)	-	Decreasing clinical activity
Sporadic	Isolated cases of laboratory confirmed influenza infection	+	Increasing clinical activity
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)	=	Stable clinical activity
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)	A(H1)v	Type A, Subtype H1v
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)	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	Low	Regional	Decreasing	15	A(H1N1)v	6.7	-	7.1	Graphs	Graphs
Belgium	Medium	Widespread	Increasing	438	A(H1)v	69.2	712.1	2280.9	Graphs	Graphs
Bulgaria	Medium	Sporadic	Increasing	0	A(H1)v	-	-	972.9	Graphs	Graphs
Czech Republic	Low	Sporadic	Stable	50	A(H1N1)v	6.0	28.1	959.2	Graphs	Graphs
Denmark	Low	Sporadic	Stable	3	A(H1N1)v	33.3	65.9	0.0	Graphs	Graphs
Estonia	Low	No activity	Stable	6	None	0.0	2.0	271.6	Graphs	Graphs
Germany	Low	Regional	Increasing	84	A(H1N1)v	27.4	-	1105.3	Graphs	Graphs
Greece				13	None	15.4	-	-	Graphs	Graphs
Hungary	Low	Local	Decreasing	36	A(H1)v	13.9	142.1	-	Graphs	Graphs
Iceland	Very High	Widespread	Stable	0	-	-	557.9	-	Graphs	Graphs
Ireland	Very High	Widespread	Increasing	153	A(H1N1)v	54.9	210.9	-	Graphs	Graphs
Italy	Medium	Local	Increasing	5	A(H1N1)v	100.0	388.2	-	Graphs	Graphs
Latvia	Low	Sporadic	Increasing	0	None	-	0.0	963.8	Graphs	Graphs
Lithuania	Low	Sporadic	Stable	0	-	-	0.1	450.1	Graphs	Graphs
Luxembourg				117	A(H1)v	17.1	-	-	Graphs	Graphs
Malta	High	Regional	Increasing	0	-	-	15464.6	-	Graphs	Graphs
Netherlands	Medium	Widespread	Increasing	47	A(H1)v	51.1	72.8	-	Graphs	Graphs
Norway	Medium	Widespread	Increasing	32	A(H1N1)v	65.6	197.4	-	Graphs	Graphs
Poland	Low	Sporadic	Increasing	32	None	6.3	54.6	0.0	Graphs	Graphs
Portugal	Low	Sporadic	Stable	5	A(H1)v	0.0	17.8	-	Graphs	Graphs
Romania	Low	No activity	Stable	32	None	6.3	0.5	642.5	Graphs	Graphs
Slovakia	Low	Sporadic	Increasing	0	-	-	222.7	1676.0	Graphs	Graphs
Slovenia	Low	Sporadic	Stable	23	A(H1)v	39.1	8.7	1045.3	Graphs	Graphs
Spain	Medium	Widespread	Increasing	637	A(H1N1)v	46.0	182.6	-	Graphs	Graphs
Sweden	High	Regional	Increasing	98	A(H1)v	32.7	8.7	-	Graphs	Graphs
UK - England	Medium	Widespread	Increasing	497	A(H1N1)v	22.4	42.8	465.4	Graphs	Graphs
UK - Northern Ireland	High	Sporadic	Increasing	52	A(H1N1)v	80.8	280.6	448.6	Graphs	Graphs
UK - Scotland	Medium	Regional	Increasing	0	-	-	47.7	376.3	Graphs	Graphs
UK - Wales	Medium	Widespread	Increasing	0	-	-	60.2	-	Graphs	Graphs
Europe				2375		40.6			Graphs	Graphs

Description of the system

This surveillance is based on nationally organised 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 Cyprus 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. Additional semi-quantitative indicators of intensity, geographic spread and trend of influenza activity at national level are also reported.

Virological surveillance

Weekly analysis – virology

In week 43/2009, 23 countries reported virological data. Sentinel physicians collected 2 375 respiratory specimens, of which 965 (41%) were positive for influenza virus (Table1). In addition, 3 377 non-sentinel source specimens (e.g. specimens collected for diagnostic purposes in hospitals) were reported positive for influenza virus. Influenza A(H1N1)v virus accounted for 82% of all influenza-positive sentinel and non-sentinel specimens in week 43 and for 83% since week 40. 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 is the same as the proportion seen in the previous week (40%). So far, eight antigenically characterised strains were reported as A(H1)v California/7/2009-like.

Of the 30 influenza A(H1N1)v isolates tested in this new season so far, all turned out to be susceptible to oseltamivir and zanamivir (Table 3).

Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2009–43/2009

Virus type/subtype	Current Week		Season	
	Sentinel	Non-sentinel	Sentinel	Non-sentinel
Influenza A	964	3377	2718	7917
A (pandemic H1N1)	892	2662	2555	6329
A (subtyping not performed)	72	715	159	1565
A (not subtypable)	0	0	3	7
A (H3)	0	0	1	15
A (H1)	0	0	0	1
Influenza B	1	0	13	14
Total Influenza	965	3377	2731	7931

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 40/2009–43/2009

Sentinel data of number of specimens positive for influenza viruses A and B

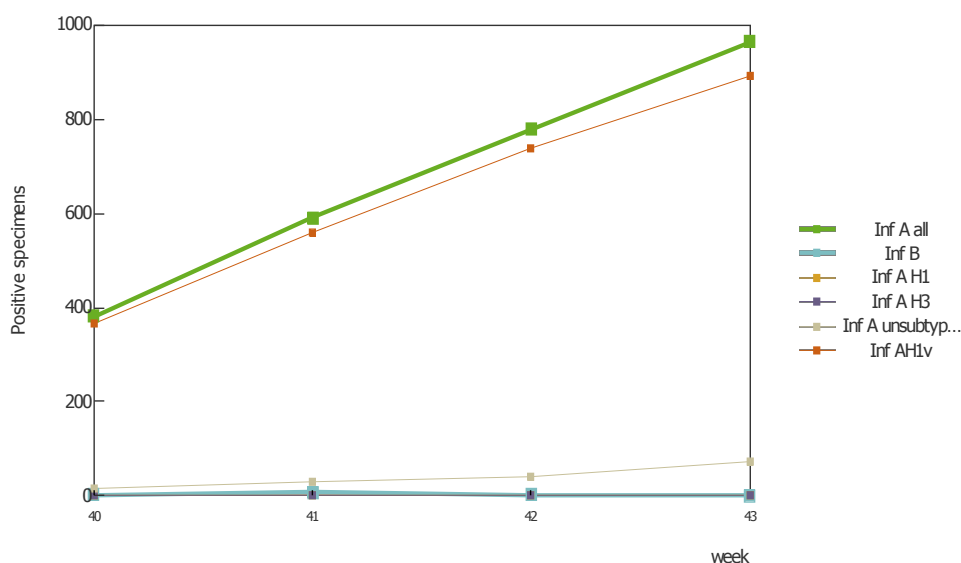


Figure 2: Number of non-sentinel specimens positive for influenza by type, subtype and week of report, weeks 40/2009-43/2009

Non-sentinel data of number of specimens positive for influenza viruses A and B

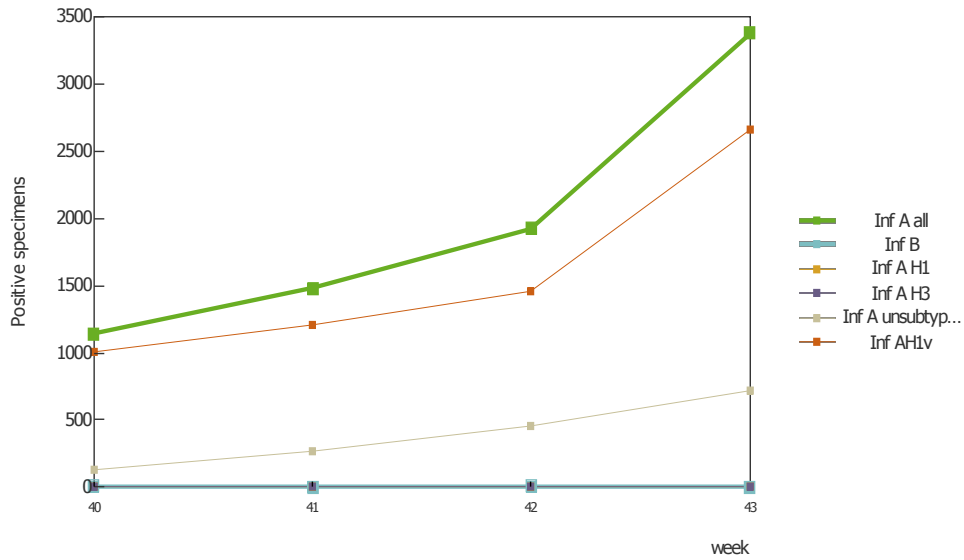


Figure 3: Proportion of sentinel samples positive for influenza, weeks 40/2009-43/2009

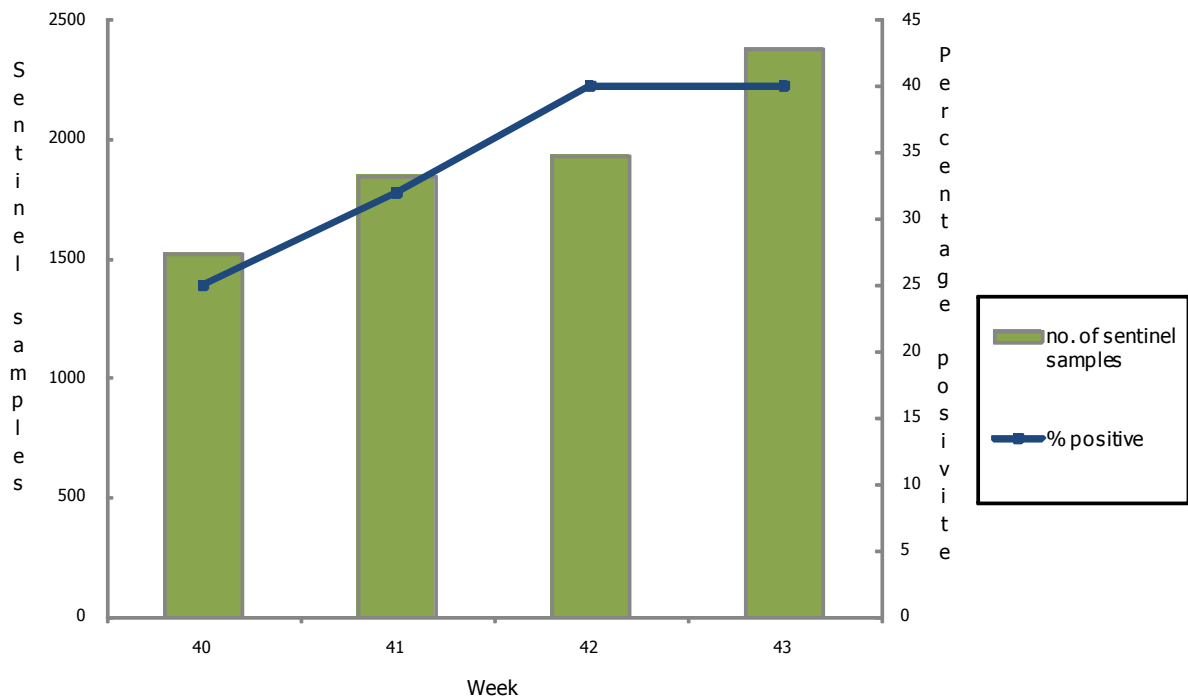


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2009–43/2009

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)	0	0	0	0	0	0
A(H1N1)	0	0	0	0	0	0
A(H1N1)v	30	0	30	0	0	0
B	0	0	0	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 influenza A(H1N1)v cases and deaths

Weekly analysis — cases and deaths

During week 43/2009, 11 countries reported 2 589 newly diagnosed probable and confirmed cases of influenza A(H1N1)v. Altogether 12 deaths were reported by the Czech Republic, Iceland, Ireland, Italy, the Netherlands and Norway. The cumulative number of reported cases since April 2009 in EU/EEA Member States totals 54 072, of which 95 are reported to have died (Table 4).

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

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

Country	Current week		Cumulative	
	Cases	Deaths	Cases	Deaths
Austria	-	-	330	0
Belgium	-	-	126	0
Bulgaria	-	-	72	0
Cyprus	-	-	297	0
Czech Republic	17	1	300	1
Denmark	-	-	562	0
Estonia	2	0	70	0
Finland	-	-	222	0
France	-	-	464	0
Germany	-	-	16835	0
Greece	-	-	1839	1
Hungary	9	0	210	3
Iceland	105	0	593	0
Ireland	540	4	2725	9
Italy	38	1	4886	1
Latvia	2	0	32	0
Lithuania	-	-	51	0
Luxembourg	-	-	0	0
Malta	15	0	439	3
Netherlands	0	2	1121	6
Norway	793	3	2345	7
Poland	0	0	170	0
Portugal	-	-	2624	0
Romania	6	0	381	0
Slovakia	-	-	125	0
Slovenia	-	-	217	0
Spain	-	-	1308	4
Sweden	349	0	2130	2
United Kingdom	339	0	12816	57
Total	2215	11	53290	94

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

In week 43/2009, 139 SARI cases were reported. Since the beginning of this surveillance, five EU Member States have reported 313 cases including four fatalities (1.3%). Apart from the current week, the trend in the numbers of SARI cases has been steadily increasing since week 36, most probably due to improved reporting.

The female/male ratio in week 43 is slightly higher than 1. This imbalance is explained by the age groups between 18 and 59 years where up to three times more females than males were affected by SARI. In total, 90% of cases are aged less than 45 years (Table 6). Since the beginning of the season, 96.2% of SARI cases related to influenza infection were caused by the influenza A(H1N1)v virus (Table 7). Of SARI patients reported during the current week, 58% received oseltamivir (Table 8); still, it is too early for any conclusion to be made regarding the potential benefits from antiviral drugs.

Twenty-nine SARI patients needed intensive care treatment in week 43, of whom 69% needed ventilator assistance (Table 9).

Fifty-three (38%) of the 139 SARI cases reported in week 43 had no known underlying medical condition; 20 (13%) were pregnant and 19 (13%) had a chronic lung disease (Table 11).

Table 5: Cumulative number of SARI cases, weeks 40/2009 to 43/2009

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
Cyprus			Unknown		1	
France			Unknown		242	3
Malta			Unknown		4	
Netherlands			Unknown		59	
Romania			Unknown		7	1
Total					313	4

Figure 4: Number of SARI cases by of onset, in week 43/2009

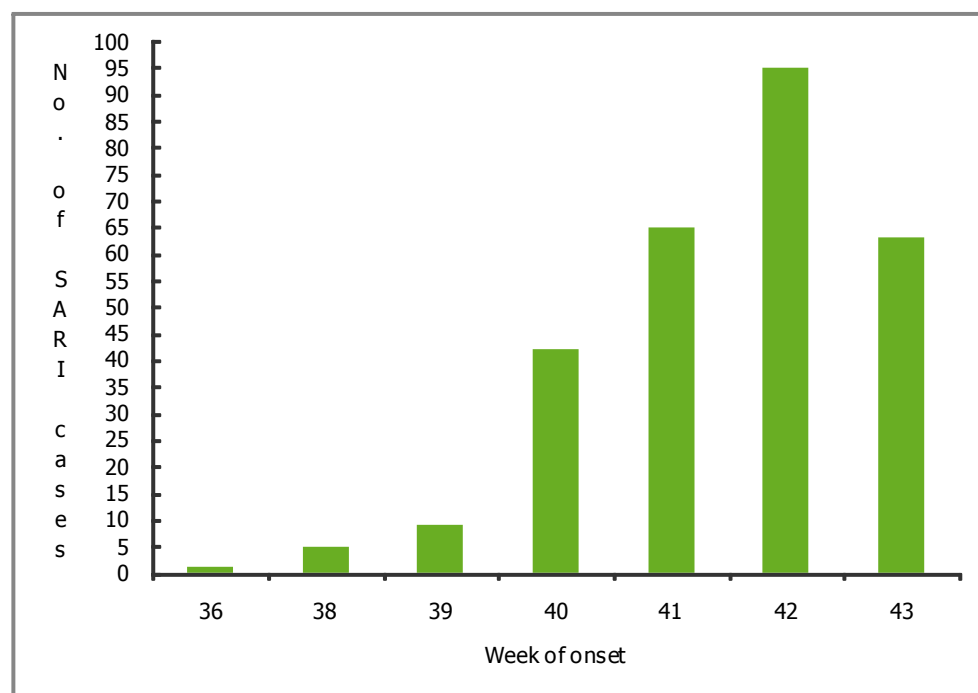


Table 6: Number of SARI cases by age and gender, in week 43/2009

Age groups	Male	Female	Other (e.g., transsexual)	Unknown
Under 2	14 (64%)	8 (36%)		
2-17	30 (55%)	25 (45%)		
18-44	12 (25%)	36 (75%)		
45-59	3 (38%)	5 (62%)		
>=60	4 (67%)	2 (33%)		
Total	63 (45%)	76 (55%)		

Table 7: Number of SARI cases by influenza type and subtype, in week 43/2009

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		2 (0.6 %)
A (pandemic H1N1)	134 (96.4 %)	301 (96.2 %)
A(subtyping not performed)		1 (0.3 %)
A(H3)		
A(H1)		1 (0.3 %)
A(H5)		
Influenza B		
Unknown	5 (3.6 %)	10 (3.2 %)
Total	139	313

Table 8: Number of SARI cases by antiviral treatment and resistance, in week 43/2009

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 (0.0 %)	81 (58.0 %)	
Other (or any other combination)		2 (1.0 %)	
Unknown	133 (95.0 %)	48 (34.0 %)	
None	5 (3.0 %)	8 (5.0 %)	
Total	139	139	

Table 9: Number of SARI cases by level of care and respiratory support, in week 43/2009

Respiratory support	ICU	Inpatient ward	Other	Unknown
No respiratory support necessary	2	19		
Oxygen therapy	5			5
Respiratory support given unknown	2		5	79
Ventilator	20			2

Table 10: Number of SARI cases by vaccination status, in week 43/2009

Vaccination Status	Number Of Cases	Percentage of cases
Not vaccinated	43	30.9
Seasonal vaccination	6	4
Unknown	90	64.7
TOTAL	139	

Table 11: Number of SARI cases by underlying condition and age group, in week 43/2009

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
Asthma	1 (4.5%)	6 (10.9%)	12 (25.0%)	1 (12.5%)	
Cancer		3 (5.5%)	1 (2.1%)		
Diabetes		1 (1.8%)	1 (2.1%)	2 (25.0%)	2 (33.3%)
Chronic heart disease			1 (2.1%)		
HIV/other immune deficiency		3 (5.5%)	5 (10.4%)		
Kidney-related condition		1 (1.8%)		1 (12.5%)	
Chronic lung disease		9 (16.4%)	4 (8.3%)	4 (50.0%)	2 (33.3%)
Neuromuscular disorder	2 (9.1%)	5 (9.1%)			
No underlying condition	17 (77.3%)	26 (47.3%)	7 (14.6%)	1 (12.5%)	2 (33.3%)
Other (please specify separately)		5 (9.1%)	2 (4.2%)		
Obesity (BMI between 30 and 40)					1 (16.7%)
Morbid obesity (BMI above 40)			3 (6.3%)		
Pregnancy	2 (9.1%)		18 (37.5%)		
Underlying condition unknown	19 (86.4%)	39 (70.9%)	44 (91.7%)	6 (75.0%)	3 (50.0%)

Table 12: Number SARI cases by complication and age group, in week 43/2009

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
Acute respiratory distress syndrome		1 (1.8%)	5 (10.4%)		1 (16.7%)
None	20 (90.9%)	48 (87.3%)	41 (85.4%)	7 (87.5%)	4 (66.7%)
Other (please specify separately)		2 (3.6%)			
Pneumonia (secondary bacterial infection)	1 (4.5%)	3 (5.5%)	3 (6.3%)	1 (12.5%)	1 (16.7%)
Sepsis/Multi-organ failure	1 (4.5%)		2 (4.2%)		
Unknown	19 (86.4%)	41 (74.5%)	44 (91.7%)	6 (75.0%)	4 (66.7%)

Table 13: Number of SARI cases by underlying condition by level of care, in week 43/2009

	ICU	Inpatient ward	Other	Unknown
Asthma	6 (18.8%)			14 (16.3%)
Cancer	1 (3.1%)			4 (4.7%)
Diabetes	3 (9.4%)			3 (3.5%)
Chronic heart disease	1 (3.1%)			
HIV/other immune deficiency	1 (3.1%)			7 (8.1%)
Kidney-related condition				2 (2.3%)
Liver-related condition	1 (3.1%)			
Chronic lung disease	6 (18.8%)	7 (31.8%)		7 (8.1%)
Neuromuscular disorder	3 (9.4%)	1 (4.5%)		4 (4.7%)
No underlying condition	8 (25.0%)	7 (31.8%)	5 (100.0%)	35 (40.7%)
Other (please specify separately)		7 (31.8%)		
Obesity (BMI between 30 and 40)	1 (3.1%)			
Morbid obesity (BMI above 40)	2 (6.3%)			1 (1.2%)
Pregnancy	2 (6.3%)			18 (20.9%)
Underlying condition unknown	28 (87.5%)	3 (13.6%)		86 (100.0%)

Table 14: Number of SARI cases by underlying condition and level of respiratory support, in week 43/2009

	Oxygen therapy	Ventilator support provided	Ventilator support necessary but not available	No respiratory support necessary	Respiratory support given unknown
Asthma	5 (50.0%)	4 (18.2%)			11 (12.8%)
Cancer					4 (4.7%)
Diabetes		2 (9.1%)			4 (4.7%)
Chronic heart disease		1 (4.5%)			
HIV/other immune deficiency		1 (4.5%)			7 (8.1%)
Kidney-related condition					2 (2.3%)
Chronic lung disease	1 (10.0%)	3 (13.6%)		9 (42.9%)	6 (7.0%)
Neuromuscular disorder	1 (10.0%)	3 (13.6%)			3 (3.5%)
No underlying condition	2 (20.0%)	8 (36.4%)		5 (23.8%)	38 (44.2%)
Other (please specify separately)				7 (33.3%)	
Obesity (BMI between 30 and 40)					1 (1.2%)
Morbid obesity (BMI above 40)	1 (10.0%)	2 (9.1%)			
Pregnancy	1 (10.0%)	2 (9.1%)			17 (19.8%)
Underlying condition unknown	10 (100.0%)	20 (90.9%)			81 (94.2%)

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.

The report text was written by an editorial team at the [European Centre for Disease Prevention and Control](#) (ECDC): Flaviu Plata, Phillip Zucs and Bruno Ciancio. 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 Prosenec (National Institute of Public Health, Slovenia).

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