

SURVEILLANCE REPORT

Weekly influenza surveillance overview

15 January 2010

Main surveillance developments in week 1/2010 (04 January—10 January)

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

- Poland reported high intensity of ILI/ARI. Six countries and the UK (Scotland) reported medium intensity of ILI/ARI, while all of the other countries reported low intensity. Eight countries reported an increasing ILI/ARI trend, while all remaining countries reported either stable or decreasing activity.
- While the proportion of influenza-positive sentinel samples continues to decline (19% positive), the 2009 pandemic influenza A(H1N1) virus still accounts for nearly all of the subtyped viruses in sentinel ILI/ARI and SARI patients.
- The number of SARI cases, measured by week of onset, continues to decline. Of the 181 reported SARI cases, 89 (49%) were known to have required ICU admission.
- Detection of 2009 pandemic influenza A(H1N1) viruses resistant to oseltamivir remains sporadic; of 1260 viruses reported, 34 (2.7%) were resistant.

Sentinel surveillance of influenza like-illness (ILI)/ acute respiratory illness (ARI): Poland reported high intensity. Bulgaria, Estonia, France, Greece, Malta, Romania and the UK (Scotland) reported medium intensity while all remaining countries reported low intensity. Greece and Slovenia reported widespread activity. Austria, Bulgaria, Hungary, Italy, Latvia, Lithuania, Poland and Romania reported an increasing trend. All other countries reported either a decreasing trend or stable activity. For more information, [click here](#).

Virological surveillance: Sentinel physicians collected 735 respiratory specimens, of which 139 (19%) were positive for influenza virus. This proportion has now decreased for the seventh consecutive week. The total number of weekly respiratory syncytial virus (RSV) detections has also decreased, although RSV detections increased in Austria, Latvia, Sweden and the UK (England). For more information, [click here](#).

Aggregate numbers of 2009 pandemic influenza (H1N1) deaths: In week 01/2010, six countries reported 85 pandemic influenza-related deaths. For more information, [click here](#).

Hospital surveillance of severe acute respiratory infection (SARI): During week 01/2010, 181 SARI cases were reported and of the 140 influenza viruses isolated from these cases and subtyped, all but one were the 2009 pandemic influenza virus. For more information, [click here](#).

Qualitative reporting: For more information, [click here](#).

Sentinel surveillance (ILI/ARI)

Weekly analysis – epidemiology

In week 01/2010, 26 out of 29 countries reported epidemiological data. For the activity intensity indicator—a comparison with baseline national network levels for ILI and/or ARI—Poland reported high intensity, Bulgaria, Estonia, France, Greece, Malta, Romania and the UK (Scotland) reported medium intensity while all remaining countries reported low intensity (Map 1, Table 1).

For the geographic spread indicator, Greece and Slovenia reported widespread activity. Austria, France, Netherlands, Romania and the UK (Scotland) reported regional activity, while the remaining countries reported local or sporadic activity (Map 2, Table 1).

Austria, Bulgaria, Hungary, Italy, Latvia, Lithuania, Poland and Romania reported an increasing trend. All other countries reported either a decreasing trend or stable activity (Table 1). For definitions of the intensity and geographic spread indicators, [click here](#).

Since week 40/2009, all countries reporting data to EISN have experienced influenza activity above baseline levels. Of the 26 countries reporting in week 1, Austria, Bulgaria, Hungary, Italy, Latvia, Lithuania, Poland and Romania observed increasing ILI/ARI rates after at least two weeks of decreasing activity. However, the increase in ILI/ARI activity is still at baseline levels and could reflect a minor fluctuation.

During the 2009/10 season, most countries started to report influenza activity above baseline levels earlier than in recent seasons. In addition, peak incidences of ILI and/or ARI have generally been higher this season. In all countries collecting information on the age of patients, individuals younger than 15 years have been the most affected age group.

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	Increasing	11	A(H1N1)v	81.8	-	7.1	Graphs	Graphs
Belgium	Low	Sporadic	Stable	24	A(H1)v	8.3	72.8	1644.2	Graphs	Graphs
Bulgaria	Medium	Local	Increasing	0	None	-	-	905.6	Graphs	Graphs
Cyprus				0	-	-	-	-	Graphs	Graphs
Czech Republic	Low	Local	Stable	11	A(H1)v	27.3	60.4	825.2	Graphs	Graphs
Denmark	Low	Sporadic	Decreasing	2	None	0.0	56.4	0.0	Graphs	Graphs
Estonia	Medium	Local	Decreasing	16	A(H1N1)v	18.8	15.9	244.6	Graphs	Graphs
Finland				0	-	-	-	-	Graphs	Graphs
France	Medium	Regional	Decreasing	82	A(H1N1)v	0.0	-	1631.6	Graphs	Graphs
Germany	Low	Local	Decreasing	52	A(H1N1)v	21.2	-	1082.6	Graphs	Graphs
Greece	Medium	Widespread	Decreasing	21	A(H1N1)v	80.0	129.7	-	Graphs	Graphs
Hungary	Low	Sporadic	Increasing	47	A(H1)v	17.0	156.5	-	Graphs	Graphs
Iceland				0	-	-	-	-	Graphs	Graphs
Ireland	Low	Sporadic	Stable	9	A(H1N1)v	22.2	21.0	-	Graphs	Graphs
Italy	Low	Sporadic	Increasing	9	A(H1N1)v	0.0	129.9	-	Graphs	Graphs
Latvia	Low	Sporadic	Increasing	0	A(H1N1)v	-	8.2	776.6	Graphs	Graphs
Lithuania	Low	Sporadic	Increasing	9	A(H1)v	22.2	10.9	398.3	Graphs	Graphs
Luxembourg	Low	Sporadic	Stable	21	A(H1)v	23.8	1458.3	25416.7	Graphs	Graphs
Malta	Medium	Local	Decreasing	0	-	-	15439.7	-	Graphs	Graphs
Netherlands	Low	Regional	Stable	10	A(H1)v	20.0	32.7	-	Graphs	Graphs
Norway	Low	Sporadic	Stable	3	A(H1N1)v	0.0	52.3	-	Graphs	Graphs
Poland	High	Local	Increasing	25	A(H1)v	0.0	96.1	-	Graphs	Graphs
Portugal	Low	Sporadic	Stable	22	A(H1)v	13.6	15.6	-	Graphs	Graphs
Romania	Medium	Regional	Increasing	94	A(H1N1)v	52.1	7.0	835.1	Graphs	Graphs
Slovakia	Low	No activity	Decreasing	1	A(H1)v	0.0	80.1	685.8	Graphs	Graphs
Slovenia	Low	Widespread	Decreasing	13	A(H1)v	23.1	21.5	999.3	Graphs	Graphs
Spain	Low	Sporadic	Decreasing	61	A(H1N1)v	11.5	29.4	-	Graphs	Graphs
Sweden	Low	Local	Decreasing	13	A(H1)v	0.0	2.9	-	Graphs	Graphs
UK - England	Low	Local	Stable	100	A(H1N1)v	13.3	19.9	510.8	Graphs	Graphs
UK - Northern Ireland	Low	Sporadic	Stable	5	A(H1N1)v	0.0	48.8	513.8	Graphs	Graphs
UK - Scotland	Medium	Regional	Stable	74	A(H1N1)v	10.8	9.6	240.8	Graphs	Graphs
UK - Wales				0	-	-	-	-	Graphs	Graphs
Europe				735		18.6				Graphs

Note: Liechtenstein is not reporting to the European Influenza Surveillance Network

Description of the system

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

Virological surveillance

Weekly analysis – virology

In week 01/2010, 25 countries reported virological data. Sentinel physicians collected 735 respiratory specimens, of which 139 (19%) were positive for influenza virus (Tables 1 & 2). This proportion has now decreased for the seventh consecutive week (Figure 3). In addition, 1401 non-sentinel source specimens (e.g. specimens collected for diagnostic purposes in hospitals) were reported positive for influenza virus. Of the 15 486 influenza viruses detected by sentinel networks and subtyped since week 40/2009, 15 393 (99%) were the pandemic virus. Table 2 shows the distribution of sentinel and non-sentinel specimens by type and subtype; Figures 1–3 show the temporal trends of virological detections.

Based on the antigenic and/or genetic characterisation of 1386 influenza viruses reported from week 40/2009 to week 01/2010, 1370 (98.8%) were reported as A/California/7/2009 (H1N1)v-like, five (<1%) as A/Brisbane/10/2007 (H3N2)-like, nine as A/Perth/16/2009 (H3N2)-like (<1%) and two as B/Victoria/2/87 lineage. Figure 4 shows the results of the antigenic characterisation of sentinel and non-sentinel influenza virus isolates since week 40/2009. For details on the current virus strains recommended by the WHO for vaccine preparation, [click here](#).

All pandemic viruses tested so far have been resistant to M2 inhibitors. Oseltamivir resistance has been detected in 34 (2.7%) of the 1260 viruses tested and reported to EISN, whereas resistance to zanamivir has not been detected in any of the 1254 strains tested (Table 3).

In week 1, specimens were tested for respiratory syncytial virus (RSV) in 13 countries reporting to EISN. The total number of RSV detections decreased for the second week since the beginning of this season (Figure 5). However, RSV detections increased in Austria, Latvia, Sweden and the UK (England).

Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40/2009–1/2010

Virus type/subtype	Current Week		Season	
	Sentinel	Non-sentinel	Sentinel	Non-sentinel
Influenza A	139	1398	16122	82706
A (pandemic H1N1)	133	1221	15393	72506
A (subtyping not performed)	1	164	636	9820
A (not subtypable)	2	13	53	301
A (H3)	1	0	6	30
A (H1)	2	0	34	49
Influenza B	0	3	50	73
Total Influenza	139	1401	16172	82779

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 40/2009–1/2010

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

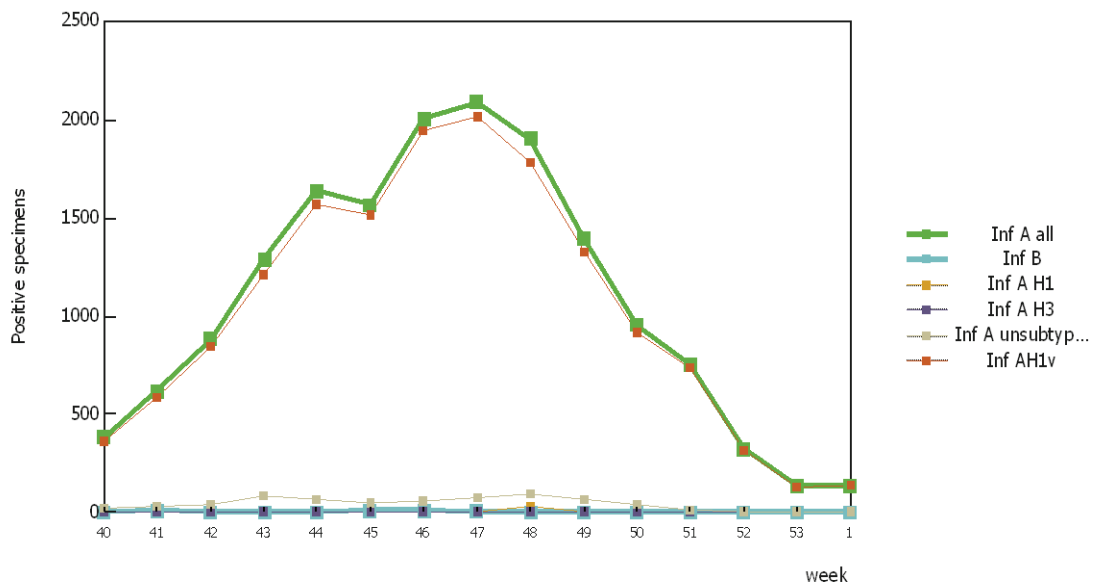


Figure 2: Number of non-sentinel specimens positive for influenza by type, subtype and week of report, weeks 40/2009–1/2010

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

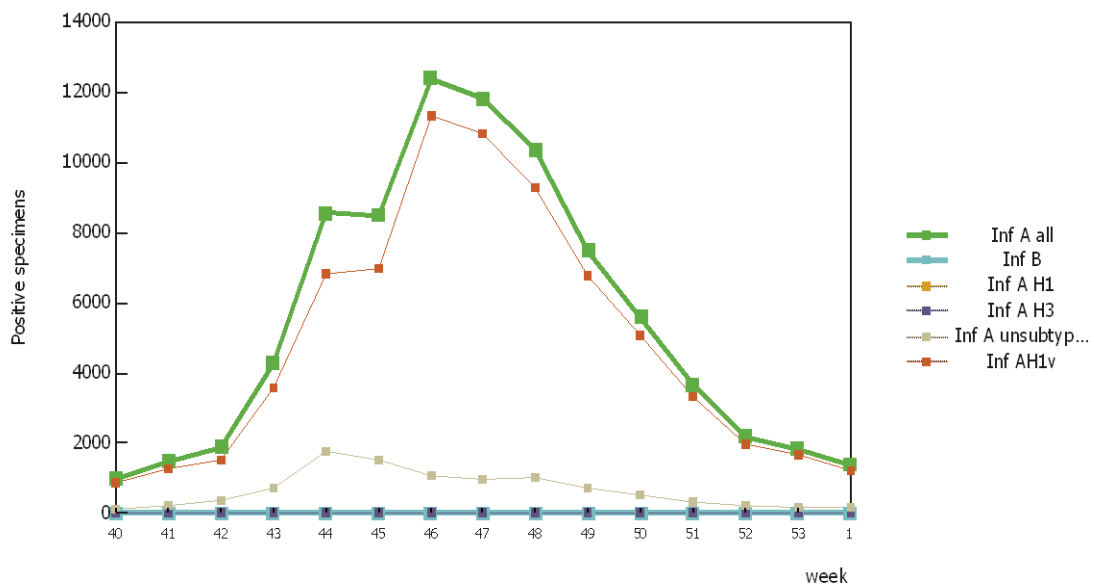


Figure 3: Proportion of sentinel samples positive for influenza, weeks 40/2009–1/2010

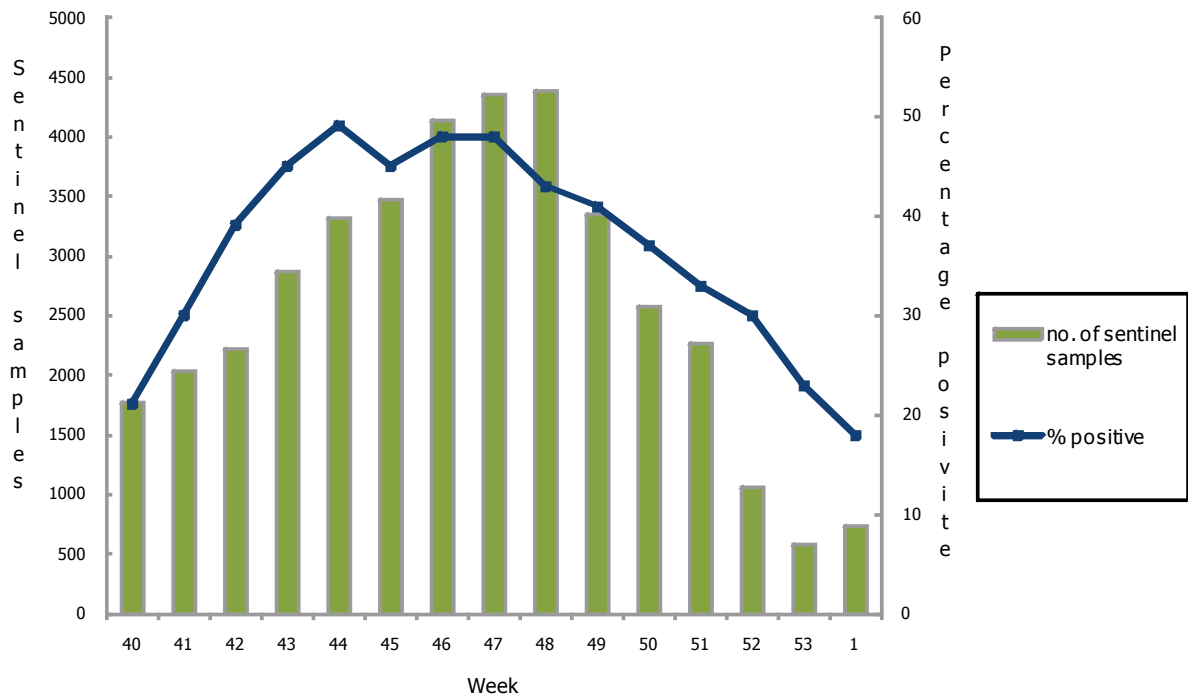


Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates since week 40/2009

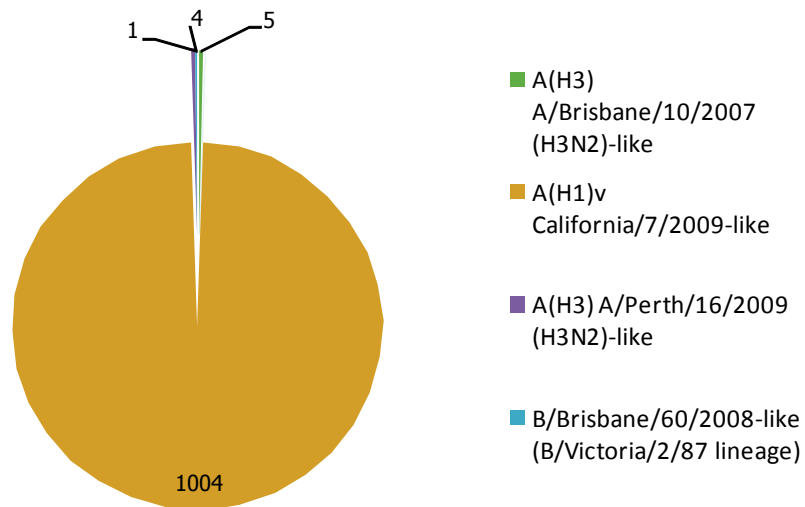
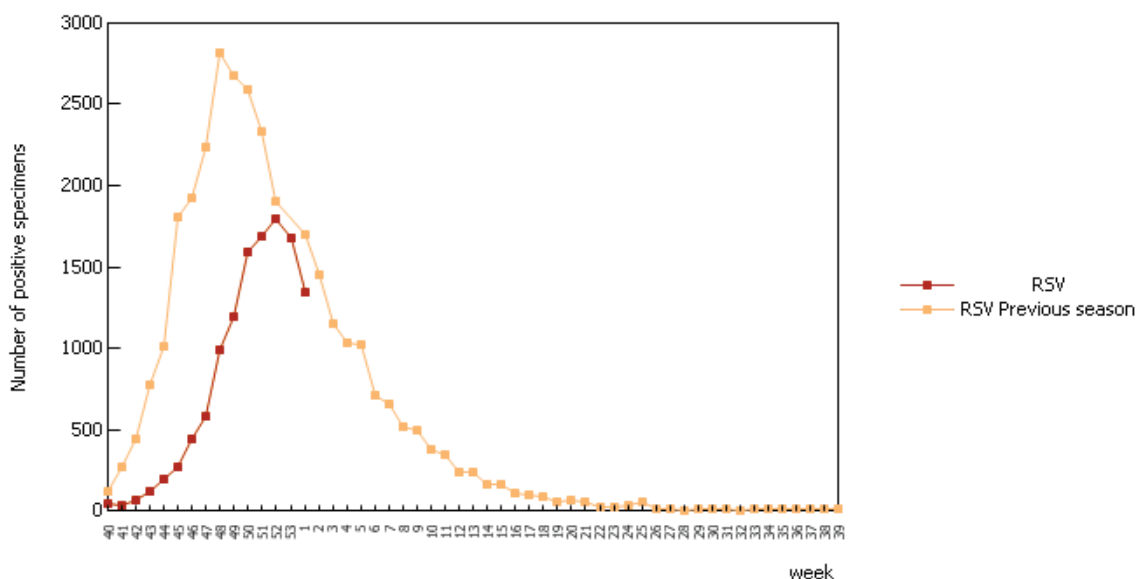


Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40/2009–1/2010

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	1260	34 (2.7%)	1254	0	140	140 (100%)
B	0	0	0	0		

Figure 5: Respiratory syncytial virus (RSV) detections (sentinel and non-sentinel), weeks 40/2009–01/2010



Comments on virological data provided by countries in week 01/2010

The Netherlands

By week 2/2010 in the Netherlands, 17 patients were diagnosed with oseltamivir resistant pandemic A(H1N1) 2009 influenza virus. Compared to week 1/2010, one additional patient was diagnosed with a mixed population of H275Y oseltamivir resistant and wild-type virus. Thirteen of 15 patients receiving oseltamivir therapy were immunosuppressed due to cytostatic/immunosuppressive therapy, of which five died. One patient with 100% oseltamivir resistant virus population did not receive oseltamivir. Contact tracing identified no cases of onward transmission of the oseltamivir resistant viruses.

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 2009 pandemic influenza A(H1N1) deaths

Weekly analysis — deaths

In week 01/2010, eight countries reported 85 new deaths. Since the beginning of the pandemic, 1226 deaths have been reported.

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

Country	Deaths reported in week 1	Cumulative deaths since start of season
Austria	-	0
Belgium	-	0
Bulgaria	-	40
Cyprus	-	0
Czech Republic	10	83
Denmark	-	0
Estonia	0	11
Finland	-	0
France	16	243
Germany	6	176
Greece	16	89
Hungary	13	70
Iceland	-	2
Ireland	0	22
Italy	-	1
Latvia	-	31
Lithuania	2	18
Luxembourg	-	3
Malta	0	4
Netherlands	-	54
Norway	0	29
Poland	-	9
Portugal	-	0
Romania	21	84
Slovakia	-	0
Slovenia	1	16
Spain	-	4
Sweden	0	22
United Kingdom	0	215
Total	85	1226

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. As countries are retrospectively updating their weekly numbers of deaths and the system calculates the cumulative values based on the current status, weekly numbers of deaths published in previous WISO editions may not always add up to the cumulative totals.

Hospital surveillance – severe acute respiratory infection (SARI)

Weekly analysis – SARI

During week 01/2010, 181 SARI cases were reported, of which 61 (34%) had symptom onset during the same week. The number of cases by week of onset has been in decline since week 46/2009 (Figure 6). Since the beginning of this surveillance, ten EU countries have reported 9442 SARI cases, including 410 fatalities (Table 5).

Of the 140 influenza viruses isolated from the SARI cases and subtyped, all but one were the pandemic virus (Table 7). Of the 181 SARI cases, 89 (49%) were known to have required ICU admission and 62 (34%) needed ventilatory support (Table 9). Of the 87 SARI cases for whom an underlying condition was reported, 28 (32%) were known not to have had any underlying condition (Figure 7). Detailed information on SARI cases reported during week 1 can be found in Tables 6–12.

Table 5: Cumulative number of SARI cases, weeks 40/2009–week 1/2010

Country	Number of cases	Incidence of SARI cases per 100 000 population	Number of fatal cases reported	Incidence of fatal cases per 100 000 population	Estimated population covered
Austria	2744		21		
Belgium	1634	15.31			10668666
Cyprus	20		5		
Finland	1390		41		
France	1180		228		
United Kingdom	1360	3.44	52	0.13	39503332
Malta	100	24.18	1	0.24	413609
Netherlands	622	3.76	27	0.16	16521505
Romania	138	1.09	10	0.08	12684180
Slovakia	254		25		
Total	9442		410		

Figure 6: Number of SARI cases by week of onset.

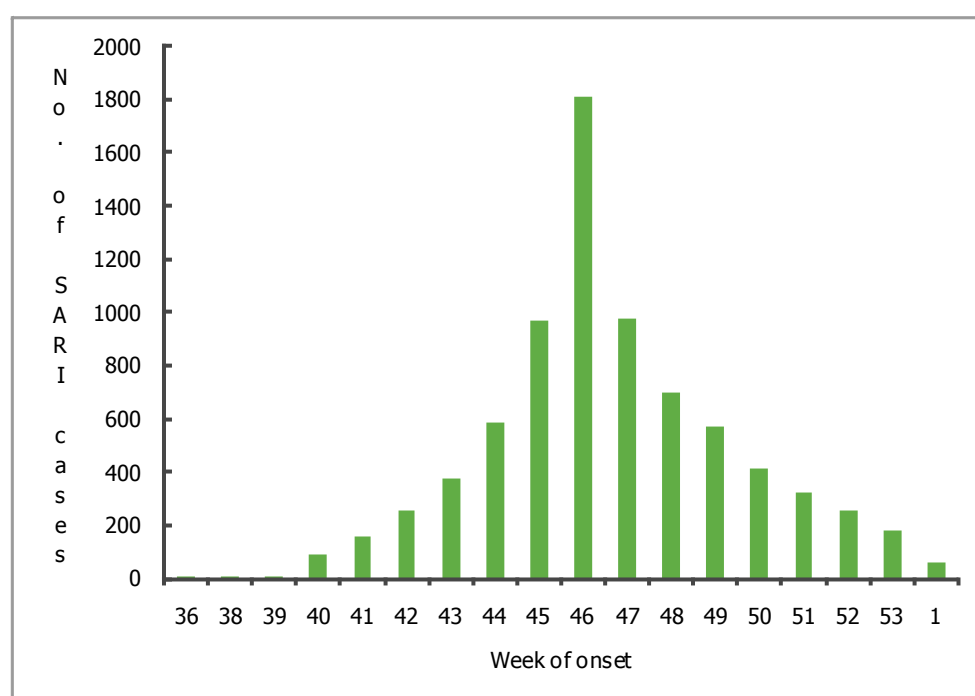


Table 6: Number of SARI cases by age and gender, week 1/2010

Age groups	Male	Female
Under 2	6	6
2-17	10	5
18-44	28	28
45-59	21	28
>=60	29	20
Total	94	87

Table 7: Number of SARI cases by influenza type and subtype, week 1/2010

Virus type/subtype	Number of cases during current week	Cumulative number of cases since the start of the season
Influenza A	141	7502
A (pandemic H1N1)	139	7451
A(subtyping not performed)	1	24
A(H3)		
A(H1)	1	27
A(H5)		
Influenza B		
Unknown	40	1940
Total	181	9442

Table 8: Number of SARI cases by antiviral treatment, week 1/2010

Antiviral treatment	Number of patients who received prophylaxis	Number of patients who received anti-viral treatment	Number of patients with strains resistant to treatment
Oseltamivir		56	
Zanamivir		2	
Oseltamivir and Zanamivir		2	
Other (or any other combination)		3	
Unknown	133	96	95
None	48	22	86
Total	181	181	181

Table 9: Number of SARI cases by level of care and respiratory support, week 1/2010

Respiratory support	ICU	Inpatient ward	Other	Unknown
No respiratory support necessary	1	2		
Oxygen therapy	23	35	1	
Respiratory support given unknown	3	7		44
Ventilator	62	1		2

Table 10: Number of SARI cases by vaccination status, week 1/2010

Vaccination Status	Number Of Cases	Percentage of cases
Both, seasonal and pandemic vaccination	1	0.6
Not vaccinated	59	33
Seasonal vaccination	15	8.3
Unknown	106	59
TOTAL	181	

Figure 7: Number of SARI cases by underlying condition, week 1/2010

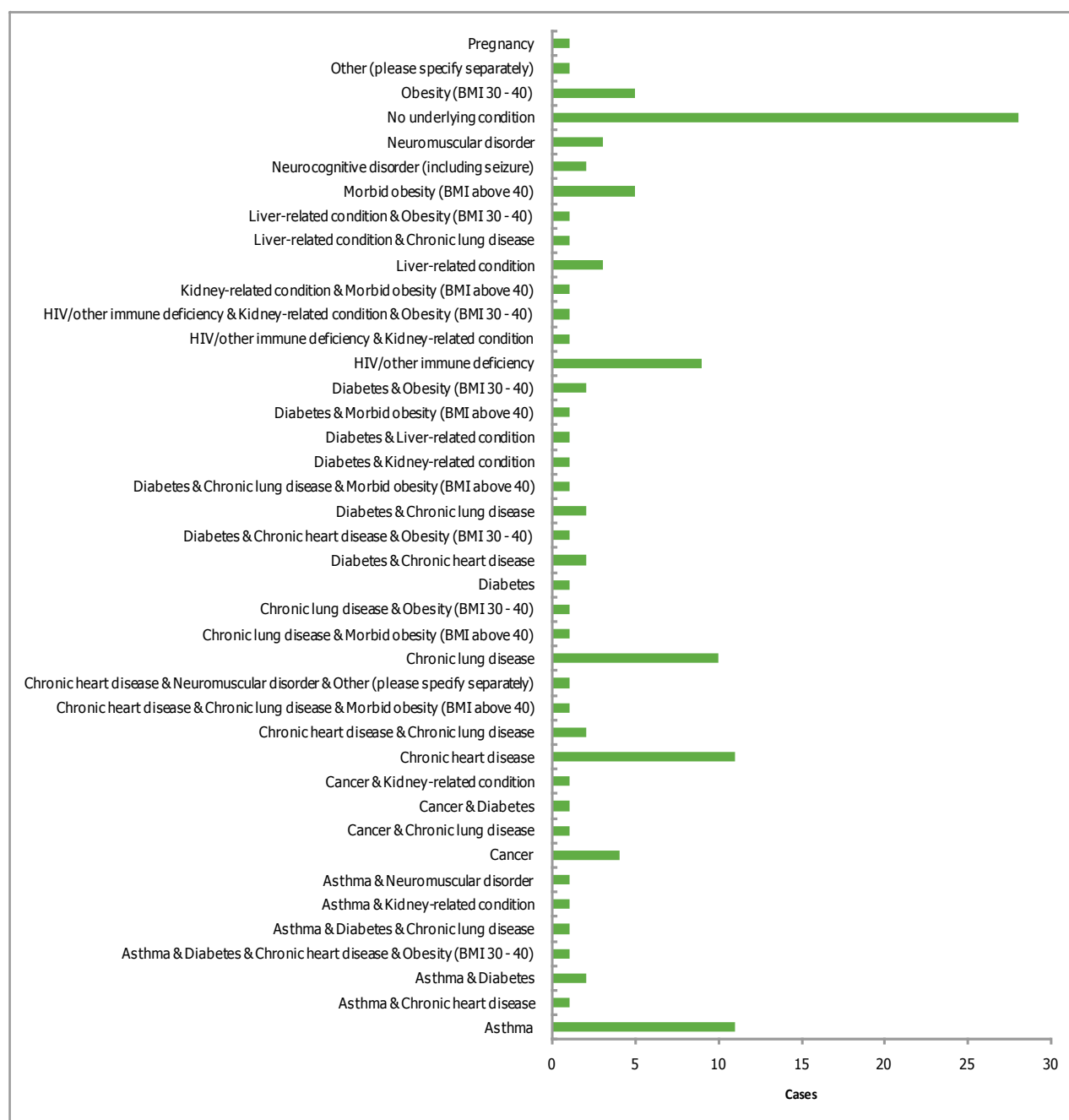


Table 11: Number of underlying conditions in SARI cases by age group, week 1/2010

Underlying condition/risk factor	Infant below 2 years Numbers	2-17 years Numbers	18-44 years Numbers	45-59 years Numbers	>=60 years Numbers
Asthma	1	1	8	4	4
Cancer			1	5	1
Diabetes			2	9	6
Chronic heart disease				2	18
HIV/other immune deficiency		1	4	3	3
Kidney-related condition			2	2	2
Liver-related condition	1		1	2	2
Chronic lung disease		2	2	8	9
Neurocognitive disorder (including seizure)		1	1		
Neuromuscular disorder		1		1	3
No underlying condition	5	3	8	7	5
Other (please specify separately)		1			1
Obesity (BMI between 30 and 40)			1	7	4
Morbid obesity (BMI above 40)			6	2	2
Pregnancy		1			
Underlying condition unknown	5	4	24	15	7

Note: Obesity is considered an underlying condition only if no other underlying condition is reported. One case can have more than one underlying condition reported.

Table 12: Additional clinical complications in SARI cases by age group, week 1/2010

Additional clinical complications	Infant below 2 years Numbers	2-17 years Numbers	18-44 years Numbers	45-59 years Numbers	>=60 years Numbers
Acute respiratory distress syndrome		5	5	12	9
Bronchiolitis			1		
Myocarditis			1	1	
None	2	2	7	3	19
Other (please specify separately)				1	
Pneumonia (secondary bacterial infection)	1	1	6	4	3
Sepsis/Multi-organ failure				2	
Unknown	9	7	37	29	18

Note: One case can have more than one complication.

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, Bruno Ciancio, Rene Snacken and Eeva Broberg. 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 Prosenc (National Institute of Public Health, Slovenia).

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All data published in the WISO are up-to-date on the day of publication. Past this date, however, published data should not be used for longitudinal comparisons as countries tend to retrospectively update their numbers in the database.

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