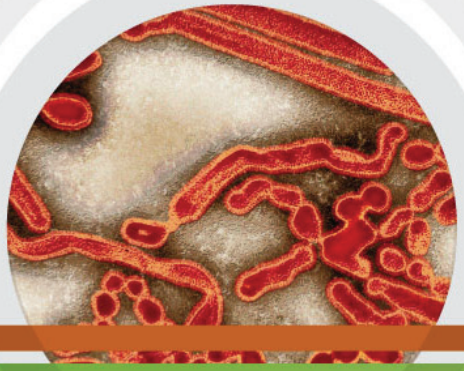


SURVEILLANCE REPORT

# Weekly influenza surveillance overview

30 December 2011

## Main surveillance developments in week 51/2011 (19–25 December 2011)

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

- During week 51/2011, low influenza activity was notified by all 21 countries reporting.
- Of 539 sentinel specimens collected during week 51/2011 and tested, 35 (6.5%) were positive for influenza viruses. Although this is still a low percentage, it has increased over the last four weeks.
- Of 271 influenza A viruses from sentinel and non-sentinel sources sub-typed since week 40/2011, 248 (91.5%) were of the H3 subtype.
- Since week 40/2011, 105 severe acute respiratory infection (SARI) cases have been reported by five countries. Twenty-three of them were confirmed influenza cases and of those typed or subtyped nine were due to A(H1N1)pdm09, three were A(H3) and two were influenza B viruses.
- With little evidence of sustained transmission in EU/EEA countries at week 51, the annual influenza seasonal epidemic in Europe is yet to start.

**Sentinel surveillance of influenza-like illness (ILI)/ acute respiratory infection (ARI):** Influenza activity of low-intensity was notified by all 21 countries reporting, with the majority of them indicating sporadic spread or no activity. For more information, **click here**.

**Virological surveillance:** Twenty-two countries reported virological data. Sentinel physicians collected 539 specimens with an increased percentage testing positive for influenza virus for the fourth consecutive week; from 1.2% in week 47 to 6.5% in week 51. For more information, **click here**.

**Hospital surveillance of severe acute respiratory infection (SARI):** Since week 40/2011, five countries have reported 105 SARI cases, 23 of which were related to influenza infection. For more information, **click here**.

# Sentinel surveillance (ILI/ARI)

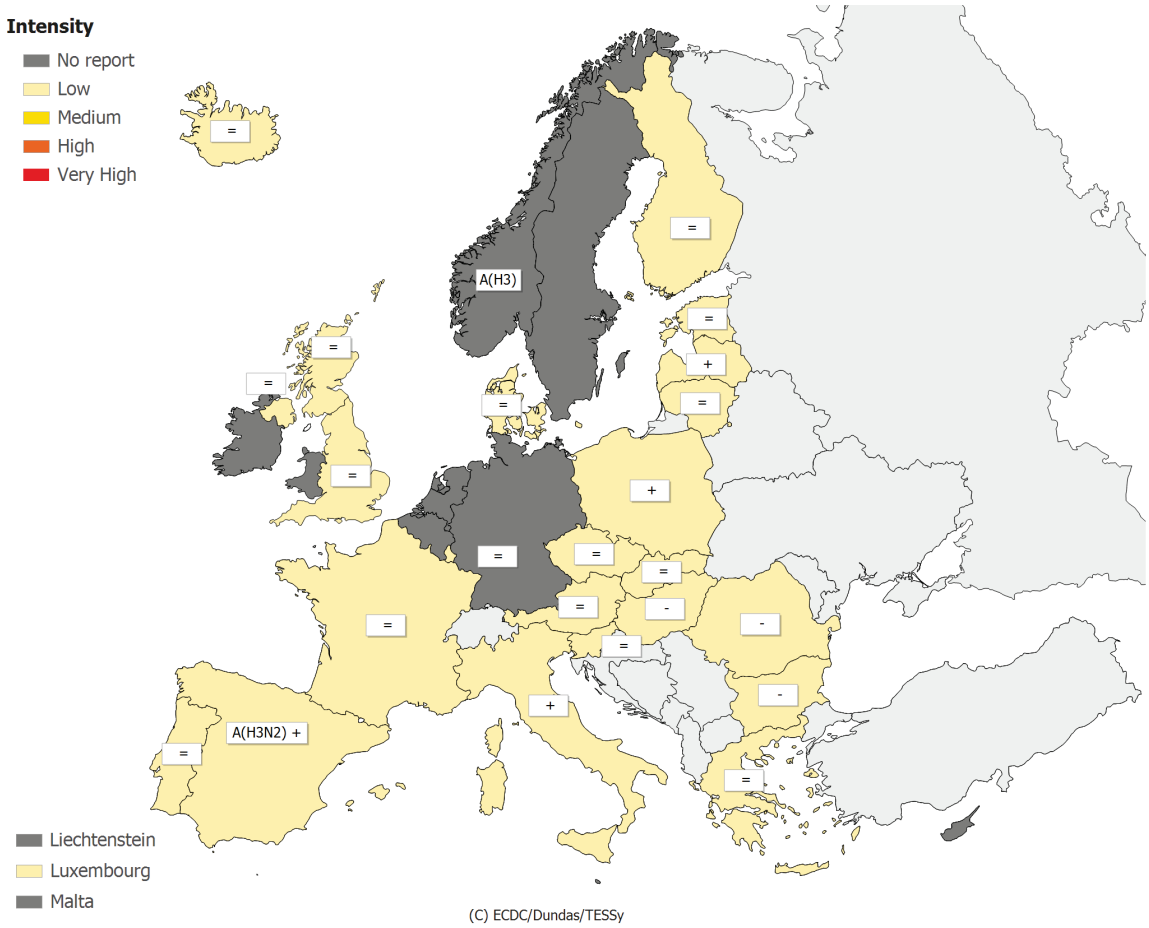
## Weekly analysis – epidemiology

During week 51/2011, twenty-one countries reported clinical data. All reporting countries experienced low-intensity influenza activity (Table 1, Map 1).

Italy reported local spread, while sporadic activity was reported by eight countries (Austria, the Czech Republic, France, Iceland, Latvia, Portugal, Romania and Spain) and the UK (England and Scotland). No geographic spread was reported by eleven countries and the UK (Northern Ireland) (Table 1, Map 2).

Stable trends in clinical activity were reported by 14 countries while an increasing trend was reported by Italy, Latvia, Poland and Spain. A decreasing trend was reported by Bulgaria, Hungary and Romania (Table 1, Map 2). These fluctuations in clinical activity, outside the period when influenza virus is circulating, are not unusual and reflect other causes of influenza-like illness or acute respiratory infection.

## Map 1: Intensity for week 51/2011

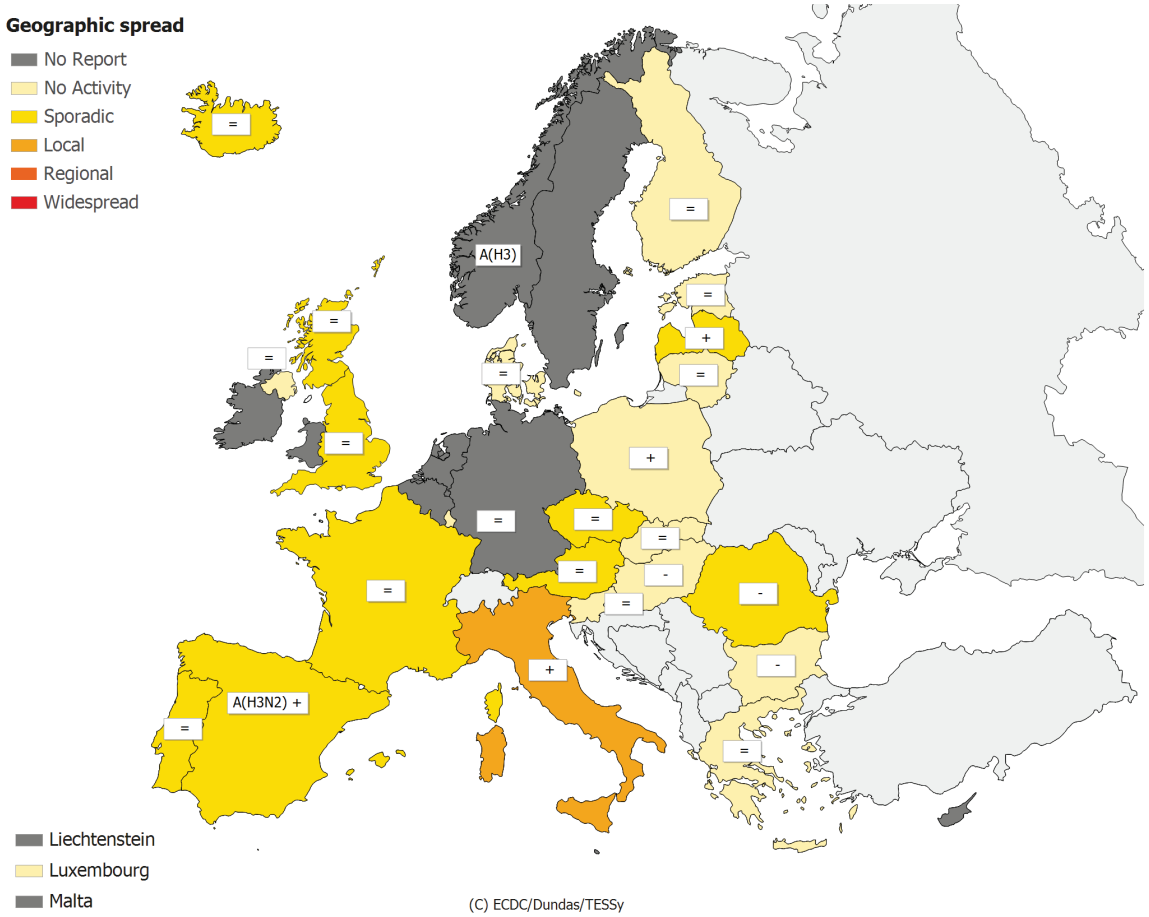



* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

Legend:

| | | | |
|---|---|---|---|
| **No report** | Intensity level was not reported | **+** | Increasing clinical activity |
| **Low** | No influenza activity or influenza at baseline levels | **-** | Decreasing clinical activity |
| **Medium** | Usual levels of influenza activity | **=** | Stable clinical activity |
| **High** | Higher than usual levels of influenza activity | **A(H3)** | Type A, Subtype H3 |
| **Very high** | Particularly severe levels of influenza activity | **A(H3N2)** | Type A, Subtype H3N2 |

## Map 2: Geographic spread for week 51/2011




* A type/subtype is reported as dominant when at least ten samples have been detected as influenza positive in the country and of those > 40 % are positive for the type/subtype.

Legend:

| | |
|---|---|
| **No report** | Activity level was not reported |
| **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) |

| | |
|---|---|
| **+** | Increasing clinical activity |
| **-** | Decreasing clinical activity |
| **=** | Stable clinical activity |
| **A(H3)** | Type A, Subtype H3 |
| **A(H3N2)** | Type A, Subtype H3N2 |

**Table 1: Epidemiological and virological overview by country, week 51/2011**

| Country | Intensity | Geo-graphic spread | Trend | No. of sentinel specimens | Dominant type | Percentage positive | ILI per 100 000 | ARI per 100 000 | Epidemio-logical overview | Virological overview |
|---|---|---|---|---|---|---|---|---|---|---|
| Austria | Low | Sporadic | Stable | 9 | None | 0.0 | 13.3 | - | Graphs | Graphs |
| Belgium | | | | - | - | 0.0 | - | - | | |
| Bulgaria | Low | No activity | Decreasing | 7 | None | 0.0 | - | 970.4 | Graphs | Graphs |
| Cyprus | | | | - | - | 0.0 | - | - | | |
| Czech Republic | Low | Sporadic | Stable | - | - | 0.0 | 34.3 | 983.3 | Graphs | Graphs |
| Denmark | Low | No activity | Stable | - | - | 0.0 | 63.2 | - | Graphs | Graphs |
| Estonia | Low | No activity | Stable | 7 | None | 0.0 | 6.3 | 219.0 | Graphs | Graphs |
| Finland | Low | No activity | Stable | 10 | None | 0.0 | - | - | Graphs | Graphs |
| France | Low | Sporadic | Stable | 47 | None | 4.3 | - | 2313.0 | Graphs | Graphs |
| Germany | | | | 59 | None | 1.7 | - | - | Graphs | Graphs |
| Greece | Low | No activity | Stable | 0 | None | 0.0 | 62.9 | - | Graphs | Graphs |
| Hungary | Low | No activity | Decreasing | 0 | None | 0.0 | 51.9 | - | Graphs | Graphs |
| Iceland | Low | Sporadic | Stable | 0 | - | 0.0 | 6.3 | - | Graphs | Graphs |
| Ireland | | | | - | - | 0.0 | - | - | | |
| Italy | Low | Local | Increasing | 36 | None | 8.3 | 174.9 | - | Graphs | Graphs |
| Latvia | Low | Sporadic | Increasing | 0 | None | 0.0 | 1.0 | 1074.0 | Graphs | Graphs |
| Lithuania | Low | No activity | Stable | 3 | None | 0.0 | 1.4 | 453.0 | Graphs | Graphs |
| Luxembourg | Low | No activity | Stable | 12 | None | 0.0 | -* | -* | Graphs | Graphs |
| Malta | | | | - | - | 0.0 | - | - | | |
| Netherlands | | | | 8 | None | 0.0 | - | - | Graphs | Graphs |
| Norway | | | | 5 | A(H3) | 40.0 | - | - | Graphs | Graphs |
| Poland | Low | No activity | Increasing | 9 | None | 0.0 | 150.2 | - | Graphs | Graphs |
| Portugal | Low | Sporadic | Stable | 3 | - | 33.3 | 4.5 | - | Graphs | Graphs |
| Romania | Low | Sporadic | Decreasing | 23 | None | 4.3 | 3.1 | 632.5 | Graphs | Graphs |
| Slovakia | Low | No activity | Stable | 2 | None | 0.0 | 162.2 | 1518.0 | Graphs | Graphs |
| Slovenia | Low | No activity | Stable | 9 | - | 0.0 | 0.0 | 1158.2 | Graphs | Graphs |
| Spain | Low | Sporadic | Increasing | 132 | A(H3N2) | 17.4 | 39.8 | - | Graphs | Graphs |
| Sweden | | | | - | - | 0.0 | - | - | | |
| UK - England | Low | Sporadic | Stable | 120 | None | 1.7 | 9.0 | 539.3 | Graphs | Graphs |
| UK - Northern Ireland | Low | No activity | Stable | 5 | - | 0.0 | 16.6 | 553.8 | Graphs | Graphs |
| UK - Scotland | Low | Sporadic | Stable | 33 | None | 0.0 | 9.7 | 612.5 | Graphs | Graphs |
| UK - Wales | | | | - | - | 0.0 | - | - | | |
| Europe | | | | 539 | | 6.5 | | | | Graphs |

**Incidence per 100 000 is not calculated for these countries as no population denominator is provided.*
*Liechtenstein does not report to the European Influenza Surveillance Network.*

# Description of the system

Surveillance is based on nationally organised sentinel networks of physicians, mostly general practitioners (GPs), covering at least 1 to 5 % of the population in their countries. All EU/EEA Member States (except Liechtenstein) participate. 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 51/2011, 22 countries reported virological data. Of 539 sentinel specimens tested, 35 (6.5%) were positive for influenza virus (Table 1, Figure 1). In addition, 62 non-sentinel source specimens, e.g. specimens collected for diagnostic purposes in hospitals, were found to be positive for influenza virus.

Of the 97 influenza viruses detected from sentinel and non-sentinel sources during week 51/2011, 92 (94.8%) were type A and five (5.2%) were type B. All of the 50 influenza A viruses sub-typed were of the H3 subtype (Table 2).

Of the 512 influenza virus detections in sentinel and non-sentinel specimens since week 40/2011, 450 (87.9%) were type A, and 62 (12.1%) were type B viruses. Of 271 influenza A viruses sub-typed, 23 (8.5%) were A(H1)pdm09, and 248 (91.5%) were A(H3) viruses (Table 2, Figures 2 & 3). The lineage of 12 influenza B viruses has been determined: seven (58.3%) were B-Yamagata and five (41.7%) were B-Victoria lineage (Table 2). The proportion of sentinel specimens positive for influenza virus has increased for the fourth consecutive week; from 1.2% in week 47 to 6.5% in week 51 (Figure 3).

Since week 40/2011, 19 antigenic characterisations of viruses have been reported: 13 as A/Perth/16/2009 (H3N2)-like; two as A/California/7/2009 (H1N1)-like; one as B/Brisbane/60/2008-like (Victoria lineage); two as B/Florida/4/2006-like (Yamagata lineage); and one as B/Bangladesh/3333/2007-like (Yamagata lineage) (Figure 4).

Since week 40/2011 four genetic characterisations of viruses have been reported: one B(Vic) lineage-clade representative B/Brisbane/60/2008 and three B(Yam) lineage-clade representatives B/Bangladesh/3333/2007 (data not shown).

Since week 40/2011, Germany, Norway, Sweden and the Netherlands have reported antiviral resistance data to TESSy concerning 35 influenza viruses. All 18 viruses tested for sensitivity to neuraminidase inhibitors were susceptible, while the 25 viruses tested for sensitivity to M2 inhibitors were resistant (Table 3).

In week 51/2011, 14 countries reported 1085 respiratory syncytial virus detections (Figure 5).

**Table 2: Weekly and cumulative influenza virus detections by type, subtype and surveillance system, weeks 40–51/2011**

| | Current Period | | Season | |
|---|---|---|---|---|
| Virus type/subtype | Sentinel | Non-Sentinel | Sentinel | Non-Sentinel |
| Influenza A | 34 | 58 | 138 | 312 |
| A (H1)pdm09 | 0 | 0 | 4 | 19 |
| A (H3) | 33 | 17 | 113 | 135 |
| A (subtyping not performed) | 1 | 41 | 21 | 158 |
| Influenza B | 1 | 4 | 20 | 42 |
| B(Vic) lineage | 0 | 0 | 0 | 5 |
| B(Yam) lineage | 0 | 0 | 5 | 2 |
| Unknown lineage | 1 | 4 | 15 | 35 |
| **Total Influenza** | **35** | **62** | **158** | **354** |

*Note: A(H1)pdm09 and A(H3) include both N-subtyped and non-N-subtyped viruses*

**Figure 1: Number of sentinel specimens positive for influenza virus, by type, subtype and by week of report, weeks 40–51/2011**

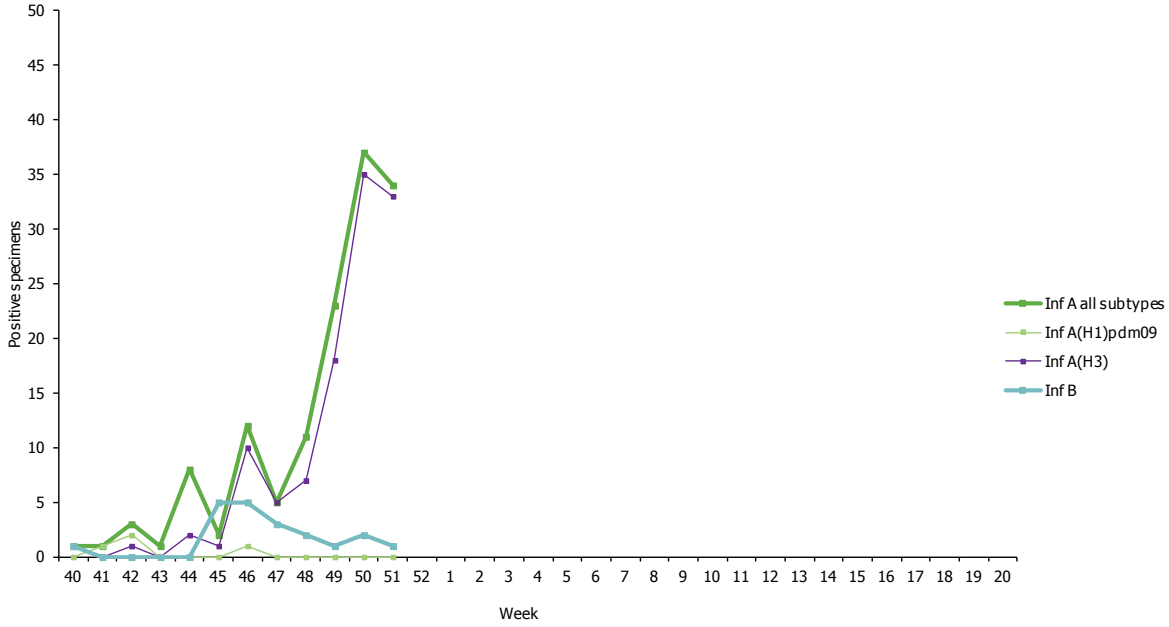



**Figure 2: Number of non-sentinel specimens positive for influenza virus, by type, subtype and week of report, weeks 40–51/2011**

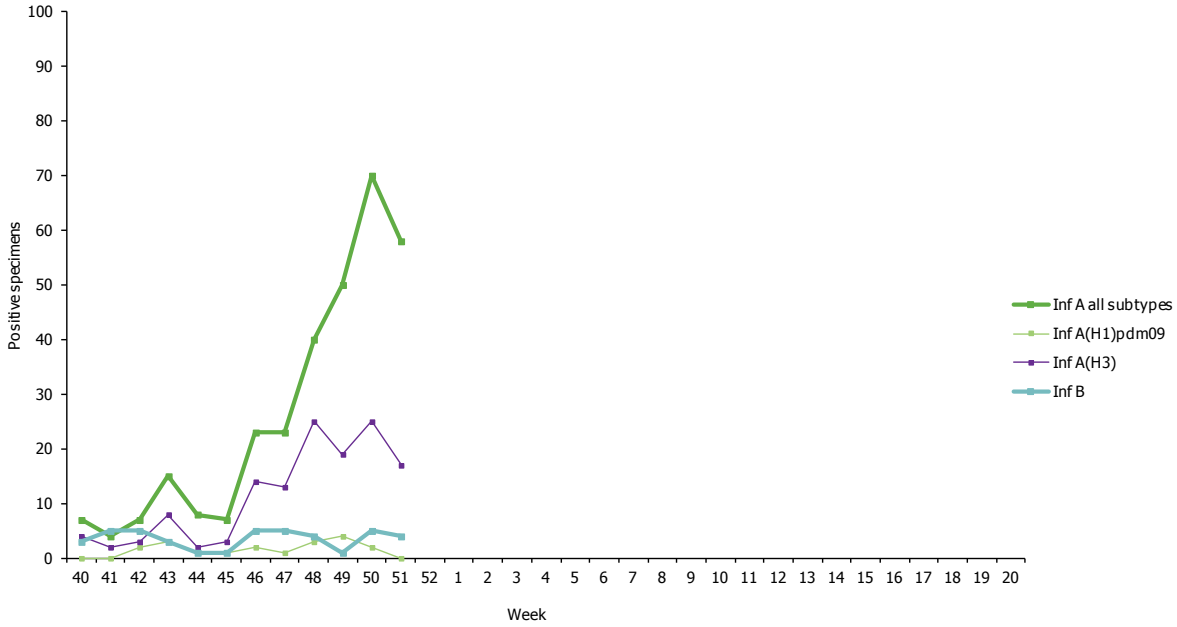


**Figure 3: Proportion of sentinel specimens positive for influenza virus, weeks 40–51/2011**

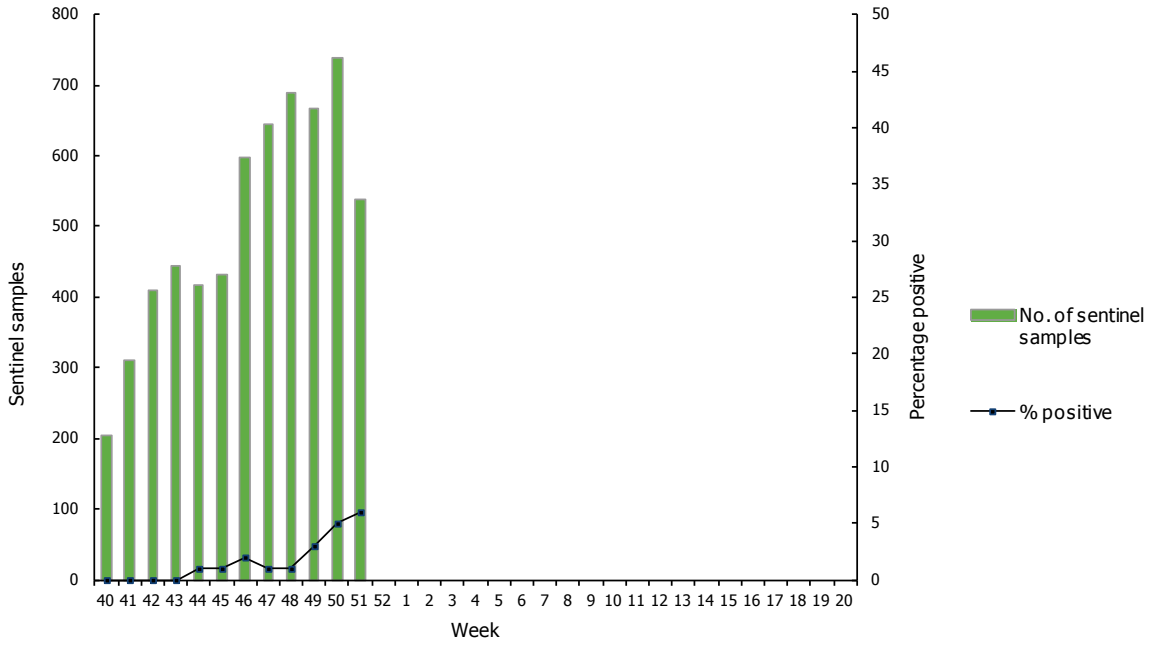



**Figure 4: Results of antigenic characterisations of sentinel and non-sentinel influenza virus isolates, weeks 40–51/2011**

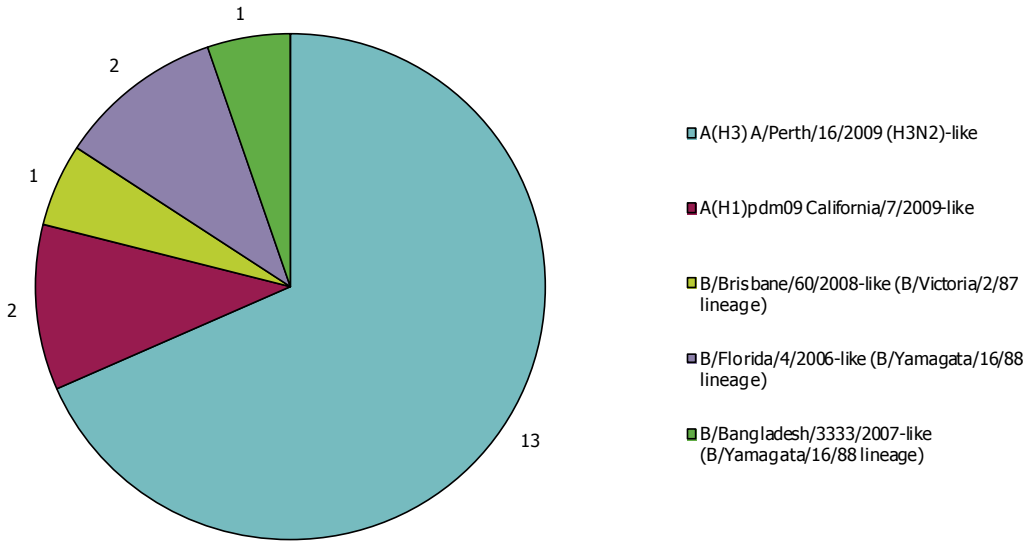
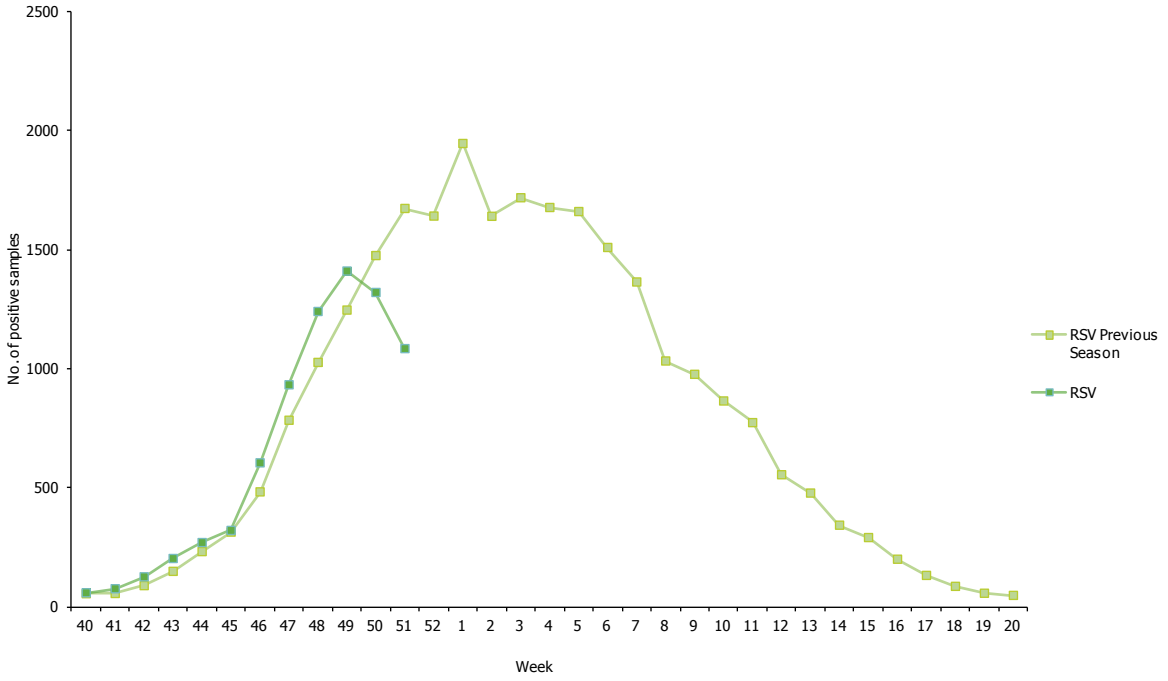


**Table 3: Antiviral resistance by influenza virus type and subtype, weeks 40–51/2011**

| Virus type and subtype | Resistance to neuraminidase inhibitors | | | | Resistance to M2 inhibitors | |
|---|---|---|---|---|---|---|
| | Oseltamivir | | Zanamivir | | Isolates tested | Resistant no. (%) |
| | Isolates tested | Resistant no. (%) | Isolates tested | Resistant no. (%) | | |
| A(H3) | 13 | 0 | 13 | 0 | 23 | 23 (100%) |
| A(H1)pdm09 | 2 | 0 | 2 | 0 | 2 | 2 (100%) |
| B | 3 | 0 | 3 | 0 | NA* | NA* |

** NA: not applicable, as M2 inhibitors do not act against influenza B viruses. Data are from single location (e.g. H275Y only) or multiple location mutation analysis (full sequencing) and/or phenotypic characterisation (IC50 determination). Therefore, data should be interpreted in this context.*

**Figure 5: Respiratory syncytial virus (RSV) detections, sentinel and non-sentinel, weeks 40–51/2011**




# Country comments

**Norway:** Whereas the number of influenza virus detections in Norway remains comparatively low, there has been an increased number of influenza A virus detections in weeks 48 to 51. All except one out of 49 influenza A viruses subtyped in Norway so far this season have been of the H3 subtype.

# Description of the system

According to the nationally defined sampling strategy, sentinel physicians take nasal or pharyngeal swabs from patients with influenza-like illness, acute respiratory infection 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.

# Hospital surveillance – severe influenza disease

## Weekly analysis of severe acute respiratory infection (SARI)

Since week 40/2011, a total of 105 SARI cases and three fatalities have been reported to TESSy by five countries (Table 4). Forty-nine (54.4 %) of 90 patients for whom information was available were male (Table 5). Of the cases reported during week 51/2011, two were confirmed to be related to influenza virus infection. Of the cumulative cases since week 40/2011, 23 have had influenza virus infection confirmed and of those where typing and subtyping has been completed, nine were due to A(H1N1)pdm09, three were A(H3) and two were influenza B viruses (Table 6).

Of the 86 patients with documented influenza vaccination status, 82 (95.3%) had not been vaccinated (Table 7). Of the four influenza-vaccinated SARI cases, two tested positive for influenza A virus infection.

**Table 4: Cumulative number of SARI cases, weeks 40–51/2011**

| 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 |
|---|---|---|---|---|---|
| Spain | 3 | | | | |
| France | 4 | | | | |
| Romania | 77 | 1.32 | **3** | 0.05 | 5813728 |
| Slovakia | 6 | 0.11 | | | 5440078 |
| United Kingdom | 15 | 0.03 | | | 59255492 |
| **Total** | **105** | | **3** | | |

*Note: Data from the United Kingdom does not include Wales.*

**Figure 6: Number of SARI cases by week of onset, weeks 40–51/2011**

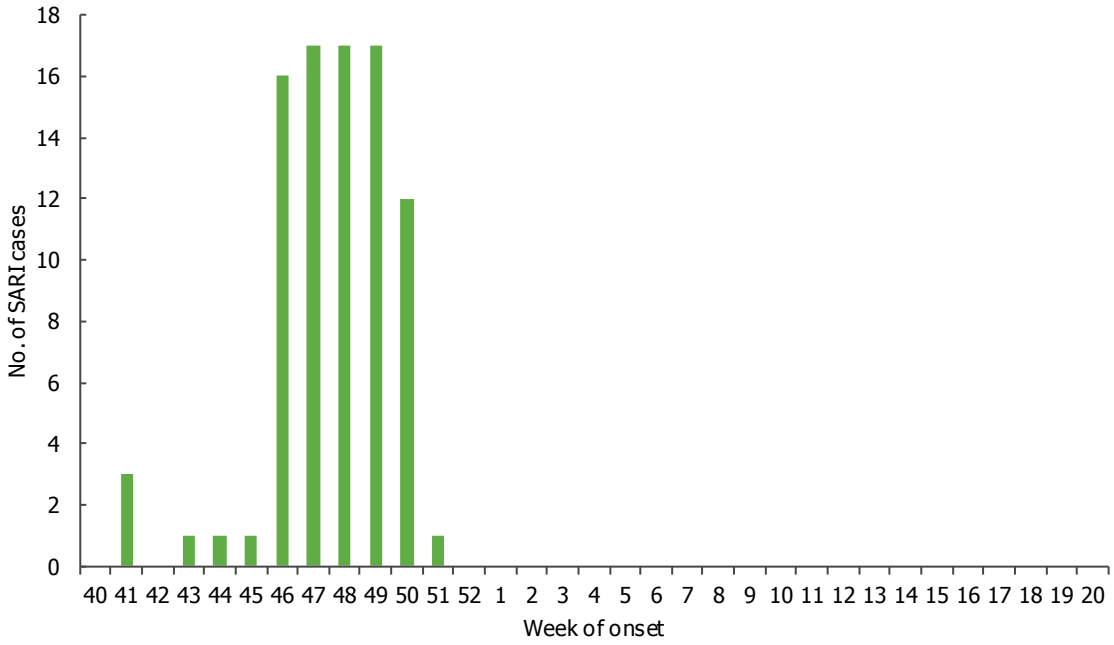



**Table 5: Number of SARI cases by age and gender, weeks 40–51/2011**

| Age groups | Male | Female | Unknown |
|---|---|---|---|
| Under 2 | 21 | 12 | |
| 2-17 | 11 | 14 | |
| 18-44 | 4 | 9 | |
| 45-59 | 5 | 1 | |
| >=60 | 8 | 5 | |
| Unknown | | | 15 |
| **Total** | **49** | **41** | 15 |

**Table 6: Number of SARI cases by influenza type and subtype and other pathogens, week 51/2011 and cumulative for the season**

| Pathogen | Number of cases during current week | Cumulative number of cases since the start of the season |
|---|---|---|
| Influenza A | 2 | 21 |
| A(H1)pdm09 | | 9 |
| A(subtyping not performed) | 1 | 9 |
| A(H3) | 1 | 3 |
| Influenza B | | 2 |
| Other Pathogen | | |
| Unknown | 8 | 82 |
| **Total** | **10** | **105** |

**Table 7: Number of SARI cases by vaccination status, weeks 40–51/2011**

| Vaccination Status | Number Of Cases | Percentage of cases |
|---|---|---|
| Both, monovalent 2009 pandemic H1N1 and seasonal 2011 vaccination | 1 | 1 |
| Not vaccinated | 82 | 78 |
| Seasonal 2011 vaccination | 3 | 2.9 |
| Unknown | 19 | 18 |
| **Total** | **105** | |

# Country comments

**Romania**: Laboratory investigations have been performed for 87% of SARI cases. Detected pathogens were: 11 parainfluenza virus type 1; two parainfluenza virus type 2; four parainfluenza virus type 4; three RSV type B; one untyped RSV; two adenovirus; two rhinovirus; two bocavirus; one Coronavirus 229E/NL63; one *Haemophilus influenzae*; seven *Streptococcus pneumoniae*; one *Pseudomonas aeruginosa* + *Klebsiella* species. To date, the total positivity rate for SARI cases has been 52.2% and the positivity rate for influenza in SARI cases 0%. In one of the three deaths registered among SARI cases, an adenovirus was detected. For the second one, no samples have been obtained (refusal of parents). In the third death *Pseudomonas aeruginosa* and *Klebsiella* spp. have been isolated from tracheo-bronchial aspirate.

*This report was written by an editorial team at the European Centre for Disease Prevention and Control (ECDC): Eeva Broberg, Flaviu Plata, Julien Beauté and René Snacken. The bulletin text was reviewed by the Community Network of Reference Laboratories for Human Influenza in Europe (CNRL) coordination team: Adam Meijer, Rod Daniels, John McCauley and Maria Zambon. On behalf of the EISN members, the bulletin text was reviewed by Amparo Larrauri Cámara (Instituto de Salud Carlos III, Spain) and Suzie Coughlan (UCD National Virus Reference Laboratory, Ireland). In addition, the report is reviewed by experts of WHO Regional Office for Europe.*