

## ECDC SURVEILLANCE REPORT

# Preliminary report on case-based analysis of influenza A(H1N1) in EU and EEA/EFTA countries

06 June 2009

These data were provided by the national contact points for surveillance and the Early Warning Reporting System contact points of the EU and EEA/EFTA countries. ECDC wishes to acknowledge the serious commitment and effort of all these individuals and their teams in ensuring the timely reporting of valid case based data from their respective countries.

### Number of cases, travel-association and hospital admission

As published in the ECDC situation report of 3 June, a cumulative number of 711 confirmed cases of new influenza A(H1N1) have been reported by 26 EU and EFTA countries.

A total of 415 cases (413 confirmed and two probable cases were reported by Germany) of new influenza A(H1N1) have been reported to ECDC as case-based data in the Early Warning Response System by 21 EU and EEA/EFTA countries out of the 25 known to have cases through epidemic intelligence, from 5 May through 3 June 2009 (Table 1).

The number of travel-related cases (having been outside the country of notification during the incubation period) is 232 (56%) overall. The information on travel association was reported as unknown or missing for 47 cases (11%).

One hundred and thirty-three of these 232 cases (57%) had returned from Mexico, 90 (39%) had travelled from the USA in the week preceding the date of onset and four had travelled in both Mexico and USA. One case reported in Germany has travelled to the United Kingdom. Information was missing for four cases.

The information on hospital admission is available for 301 cases reported in 20 countries (data from Spain will be provided retrospectively). Among these 301 cases, 138 (46%) have not been admitted to hospital, 91 (30%) have been reported as unknown and 72 (24%) have been admitted in hospital. As some hospitalisations were done for isolation purposes, the proportion of patients admitted to hospital is not an indicator for severity of disease.

**Table 1:** Reported number of cases of influenza A(H1N1), travel association and hospital admission, as of 3 June 2009

Country	Cumulative number of confirmed cases, aggregated data (1)	Number of cases, individual data (2)	Number of travel-related cases (2)	Number of hospitalised patients(2, 3)
Austria	2	2	2	2
Belgium	13	-	-	-
Bulgaria	1	-	-	-
Cyprus	1	1	1	1
Czech Republic	1	1	1	0
Denmark	1	1	1	1
Estonia	1	1	1	1
Finland	4	3	3	0
France	42	18	18	17
Germany	37	39	31	22
Greece	5	-	-	-
Hungary	2	2	2	0
Iceland	1	-	-	-
Ireland	7	7	7	0
Italy	30	26	23	11
Luxembourg	1	1	1	0
Netherlands	4	3	3	0
Norway	7	8	8	0
Poland	4	2	2	2
Portugal	2	2	2	1
Romania	6	6	3	6
Slovakia	3	3	2	3
Spain	180	113	74	-
Sweden	7	7	7	1
Switzerland	10	-	-	-
United Kingdom	339	169	40	4
<b>Total</b>	<b>711</b>	<b>415</b>	<b>232 (4)</b>	<b>72 (5)</b>

(1) daily reported through epidemic intelligence

(2) reported as case-based data

(3) some hospitalisations were for isolation purposes. For the United Kingdom, data on hospitalisation will be completed retrospectively.

(4) Information is unknown for 45 cases(n=415)

(5) Information not available from Spain, unknown for 91 patients (n=301)

## Epidemic curve

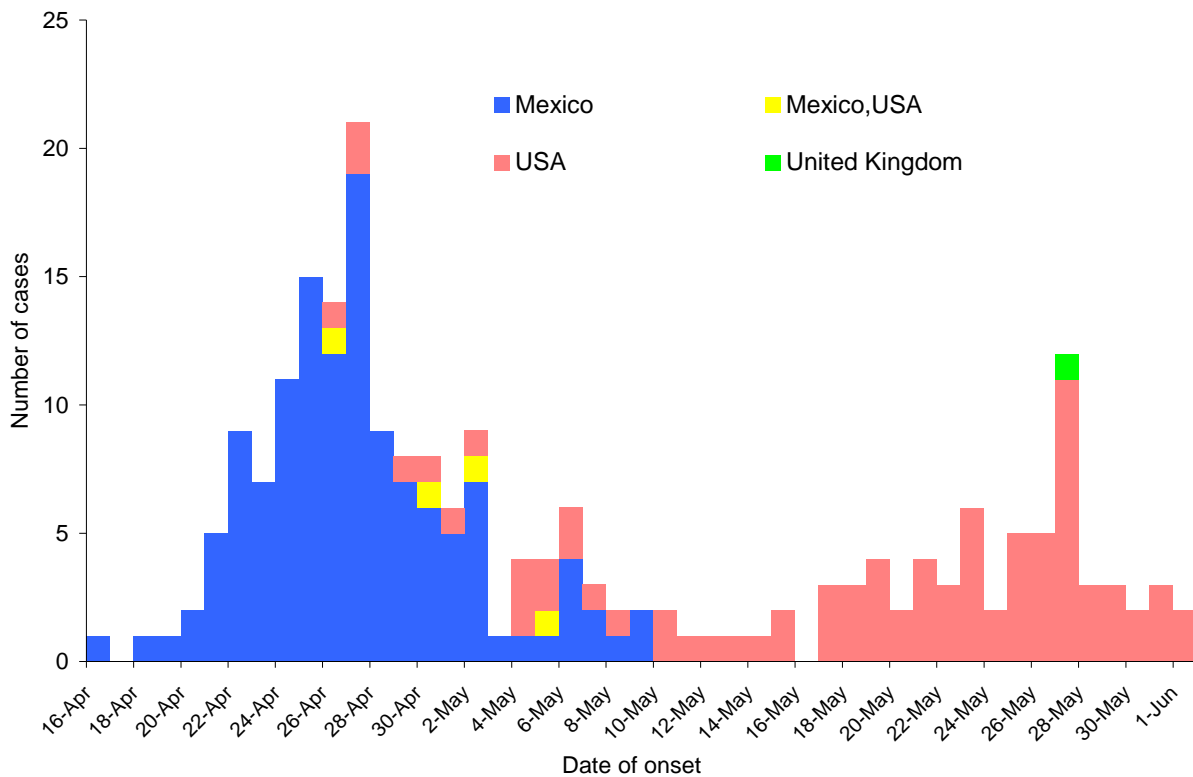
The distribution of new influenza A(H1N1) virus infection by date of onset from 16 April to 2 June has peaked twice within a one month interval, on 27th April (24 cases) and 27th May (13 cases) respectively (Figure 1). Data in the most recent two weeks should be considered to be an underestimate because of reporting delays (delay from the date that an illness starts to the date the case is reported to the EWRS by the public health authorities). The proportion of non travel-related cases appears to remain constant over time.

**Figure 1: Number of travel-related (and non travel-related) cases of new influenza A(H1N1) virus infection by date of onset, in 21 EU, EEA and EFTA countries, 16 April – 2 June 2009 (n=375).**



Figure 2 shows the distribution over time of the number of cases reported in the EU, EEA and EFTA countries (by date of onset), who had travelled in Mexico, the USA and the United Kingdom (one case returning from the United Kingdom has been reported in Germany). This shows several consecutive waves of travellers who had become ill after having travelled during the incubation period.

**Figure 2:** Distribution of travel-related cases of new influenza A(H1N1) virus infection by country of travel reported in 21 EU, EEA and EFATA countries, returning from Mexico, USA and the United Kingdom by date of onset, EU, 16 April – 1 June 2009 (n=219).

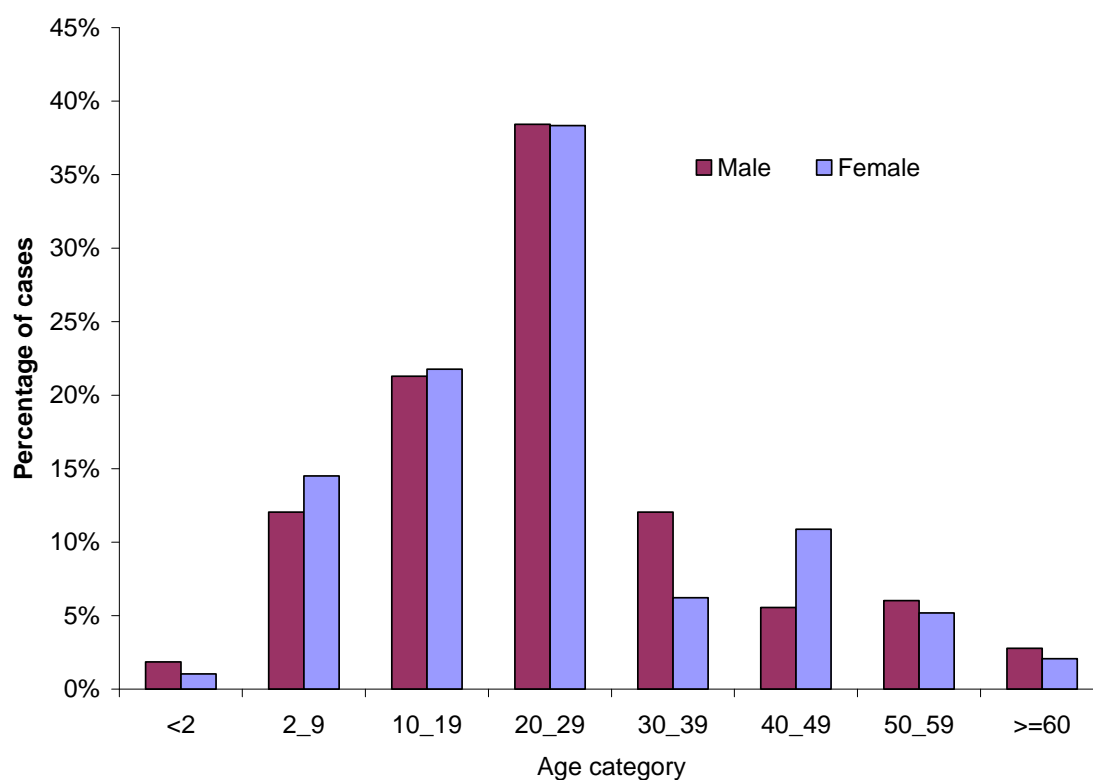


## Age and gender distribution

As shown in Table 2, information on age and gender of new influenza A(H1N1) virus infection is available for 409 cases, reported by 21 EU and EEA/EFTA countries. The male-to-female sex ratio is 1.1 (216 males and 193 females). Six infants less than two years old are reported. 142 children and young adults are between 2 and 20 years old, representing 35% of the total number of cases. One hundred and ninety-five cases (48%) are aged between 20 and 39 and 56 cases are aged between 40 and 59 (14%). The number of cases aged sixty and above is 10 (2%). The gender ratio does not vary significantly with the age distribution (Figure 3).

**Table 2:** Age and gender distribution of cases of new influenza A(H1N1) reported by 21 EU, EEA and EFTA countries from 16 April through 2 June 2009

	Female	Male	Total
<2	2	4	6
2_9	28	26	54
10_19	42	46	88
20_29	74	83	157
30_39	12	26	38
40_49	21	12	33
50_59	10	13	23
>=60	4	6	10
<b>Total</b>	<b>193</b>	<b>216</b>	<b>409</b>

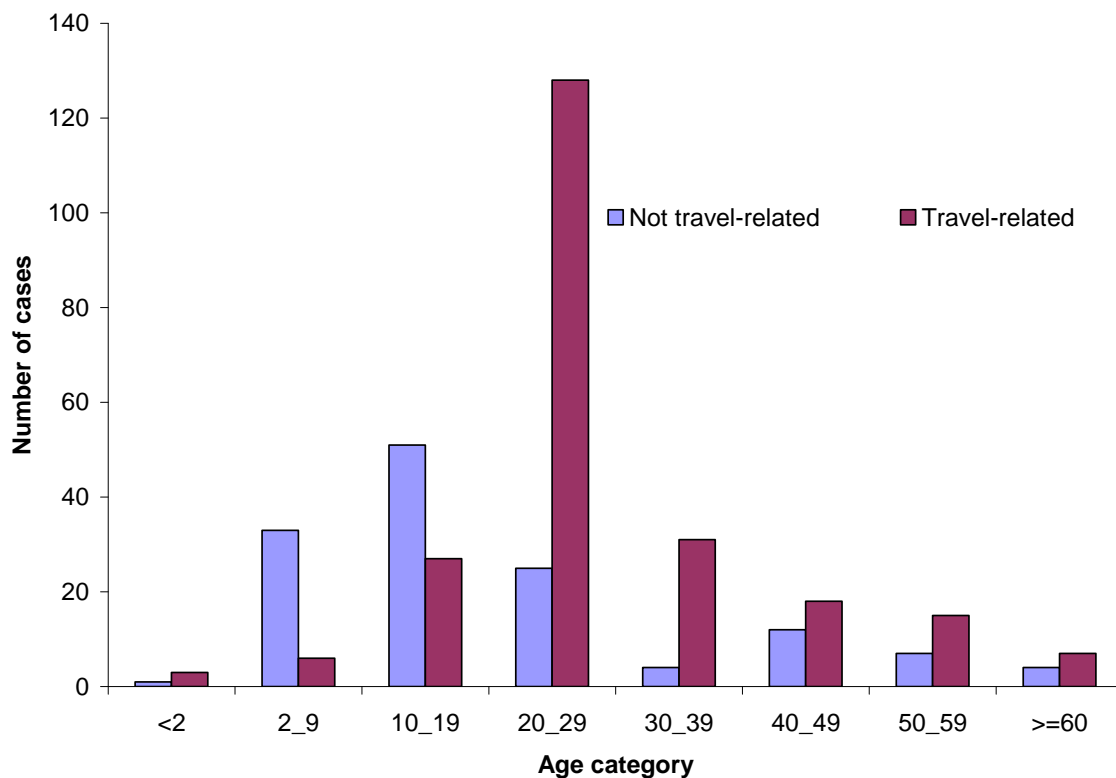
**Figure 3:** Age distribution by gender among new influenza A(H1N1) cases reported by 21 EU, EEA and EFTA countries (date of onset from 16 April to 2 June 2009)

The proportion of adults of 20 and above is significantly higher among travel related cases than among the non travel-related cases ( $\chi^2 = 86$ ,  $p < 0.001$ ) (Figure 4).

**Table 3:** Age distribution among travel-related (and not travel-related) cases of new influenza A(H1N1) reported by 21 EU, EEA and EFTA countries from 16 April through 2 June 2009

	Not travel-related	Travel-related	Total
<2	1	3	4
2_9	33	6	39
10_19	51	27	78
20_29	25	128	153
30_39	4	31	35
40_49	12	18	30
50_59	7	15	22
>=60	4	7	11
<b>Total</b>	<b>137</b>	<b>235</b>	<b>372</b>

**Figure 4:** Age distribution by travel-related (and not travel-related) infection of new influenza A(H1N1) reported by 21 EU countries (date of onset from 16 April to 2 June 2009)



## Clinical presentation

The frequency of symptoms reported by the patients is described in Table 4. Data from Spain were not included in this analysis because some re-coding issues still need to be solved for this variable. For each symptom the denominator is the total number of cases reported in case-based reports of 20 countries (302) and therefore includes asymptomatic cases. Some symptoms not originally defined in the EWRS dataset were commonly reported in the data from the United Kingdom namely malaise, chills and anorexia. Therefore they were recoded to 'other' when the data from the United Kingdom were imported to the EWRS. This partly explains that 25% of the patients were reported with other symptoms.

Some of the symptoms listed in the category 'other' that were less suggestive of ILI or ARI included the following: abdominal pain, asthma, confusion for one night, rash, hives towards end of illness, back ache, mouth ulcers, tingling in fingers, cystitis, blurred vision, hallucinations with fever.

**Table 4: Frequency of symptoms (n=302)**

	Number of cases	%
Generalised		
Fever or history of fever	263	87%
Headache	125	41%
Muscle pain	116	38%
Joint pain	68	23%
Respiratory		
Dry cough	148	49%
Productive cough	50	17%
Sore throat	149	49%
Runny nose	100	33%
Sneezing	63	21%
Shortness of breath	29	10%
Gastro-intestinal		
Diarrhoea	35	12%
Vomiting	47	16%
Nausea	52	17%
Other		
Conjunctivitis	17	6%
Nose bleed	7	2%
Altered consciousness	1	0%
Other (various)	101	25%

## Treatment and prophylaxis

The number of patients who have been treated with oseltamivir is 205 (49%). One patient received zanamivir and two patients received other treatments. No treatment was administered in 29 (7%) patients. The use of an antiviral drug for treatment is unknown in 81 (20%) patients. The information on antiviral treatment was missing for 97 patients (23%).

This information was available for 302 patients. Only 10 patients have used an antiviral (oseltamivir for 9 and zanamivir for one) drug in the 14 days before onset of illness. No prophylaxis was given to 145 patients (48%).

The information on prophylaxis was unknown in 112 (37%) patients and the number of missing records was 35 (12%).

## Pre-existing conditions and complication diagnosis

Information on pre-existing conditions was available for 21 patients (missing or unknown for 294 cases).

Among these 21 patients, the pre-existing conditions reported were:

- Heart disease for four patients
- HIV for three patients,
- Lung disease for three patients,
- Seizure for two patients,
- Other for nine patients (information available for eight patients): iodine sensitivity, septicaemia, asthma, beta thalassaemia, high blood pressure, laparotomy, right kidney removed (pre-existing tumor), skin graft.

Information on influenza complications was available from 260 cases (20 countries). Two hundred and forty-one patients (93%) had no complication. Three patients (1%) had pneumonia. Two patients reported an 'other' complication – 'elevated transaminase' and 'use of non-steroidal anti-inflammatory'. The information was unknown in 14 patients (5%).

## Vaccination

The information on the vaccination status for seasonal influenza in the previous season is available for 360 cases. Only 13 patients (4%) were reported to have been vaccinated during the last season. 187 cases (52%) received no vaccination. The vaccination status for seasonal influenza is unknown in 160 (44%) patients.

## Transmission and occupational exposure

The information on transmission was reported for 399 cases. The suspected mode of transmission was reported as a contact with a confirmed case within the last seven days in 52 cases (13%). Two hundred and nine persons (52%) are reported to have been in an area with laboratory confirmed cases of new influenza A(H1N1) virus infection. The information was unknown in 138 cases (35%).

The information on occupational exposure was supposed to answer the question: 'did the person get infected because of his/her occupation?' E.g. was the person exposed as a health care worker? This information is available for 269 cases. Twelve patients (4%) are health care workers. No occupational exposure has been reported in 109 cases (41%). One hundred and nineteen patients (44%) have been reported with an occupation 'other' (various, including air hostess, employee in an airport duty free shop, pilot). Among these 119 patients, 106 are reported by the United Kingdom where the data on occupation was designed only to identify health care workers in the light of SARS experience and the possibility of transmission in this group affecting acute services. Therefore, for cases reported by the United Kingdom, there is no further information available for 'other occupation'. This variable is currently being reviewed following discussion with the ECDC Advisory Forum.

## Laboratory variables

The laboratory method for case confirmation was reported as PCR for 321 cases, culture for two cases, other method for two cases and not available for 90 cases.

All cases but one were reported with the subtype A(H1N1), the exception was reported simply as influenza A.