ECDC SITUATION REPORT

Pandemic influenza (H1N1) 2009

Update 31 July 2009,
17:00 hours CEST

Main developments in past 24 hours

- 2403 new cases, including 738 new cases from Germany, 705 from the United Kingdom and the first death in France were confirmed and reported from the EU and EFTA countries, reaching a total of 26,424;
- 3273 new cases including 20 fatal cases, were reported from non-EU and EFTA countries, reaching a cumulative total of 156,902 cases;
- ECDC compiled an update of the analysis of individual case notification, attached to this report.

This report is based on official information provided by the national public health websites, or through other official communication channels. An update on the number of confirmed cases as of 30 July 2009, 17:00 hours CEST, is presented in Table 1 and Table 2.

Disclaimer: *The number of confirmed cases reported is based on laboratory test results, except for the US. Depending on the national laboratory testing policies, the actual number of cases by country may therefore be higher. Several countries have now announced recommendations on treatment on clinical signs only and focused laboratory testing only for specific population groups or in outbreaks. For these countries, the reported numbers of cases presented in this report will severely underestimate the true incidence in the country and will not be comparable to countries still recommending laboratory tests of all suspected influenza cases.*

Epidemiologic update

Out of the 31 EU and EFTA countries, 30 countries have reported a total of 26,424 confirmed cases of influenza A(H1N1)v infection, including 39 deaths. In the past 24 hours, 2,403 new cases and the first fatal case in France were reported from the EU and EFTA countries. Germany reported 738 new cases and the United Kingdom 705.

Outside of the EU and EFTA countries, a total of 3273 new cases have been reported within the last 24 hours. In total, 156,902 cases including 1109 fatal cases have been reported from non-EU and EFTA countries.

Globally, the total number of confirmed and reported influenza A(H1N1)v cases to date is 183,326, including 1,148 deaths.

Other developments

ECDC compiled today an update on the analysis of individual case reports provided by Member States, attached to this report.

Table 1: Reported new confirmed cases and cumulative number of influenza A(H1N1)v as of 31 July 2009, 16:00 hours (CEST) in the EU and EFTA countries

Country	Confirmed cases reported in the last 24h	Cumulative number of confirmed cases	Deaths among confirmed cases*
Austria	22	153	-
Belgium	-	126	1
Bulgaria	-	36	-
Cyprus	-	297	-
Czech Republic	6	95	-
Denmark	7	254	-
Estonia	1	40	-
Finland	2	189	-
France**	-	719	1
Germany	738	6062	-
Greece	210	730	-
Hungary	4	86	1
Iceland	5	51	-
Ireland	-	276	-
Italy	357	975	-
Latvia	1	19	-
Lithuania	7	22	-
Luxemburg	-	52	-
Malta	7	157	-
Netherlands***	153	517	-
Norway	54	471	-
Poland	12	87	-
Portugal	28	291	-
Romania	21	164	-
Slovakia	5	52	-
Slovenia	5	128	-
Spain	-	1538	6
Sweden	14	511	-
Switzerland	39	462	-
United Kingdom	705	11864	30
Total	**2403**	**26424**	**39**

Note: cases reported in the EU and EFTA countries correspond to the EWRS notifications by Member States or Ministry of Health websites.

*Deaths are included in the cumulative number of confirmed cases

** Cases reported from France include those reported from Reunion-Mayotte (26), Antilles-Guyane (9), French Polynesia (16) and French New Caledonia (112).

*** Cases from the Netherlands include those reported from Aruba and the Dutch Antilles

Table 2: Reported cumulative number of confirmed cases and deaths of influenza A(H1N1)v as of 31 July 2009, 16:00 hours (CEST) outside of the EU and EFTA area

Country	Confirmed cases reported in the last 24h	Cumulative number of confirmed cases	Deaths among confirmed cases*
OTHER EUROPEAN COUNTRIES and CENTRAL ASIA			
Albania	-	3	-
Andorra	-	1	-
Azerbaijan	-	2	-
Bosnia and Herzegovina	-	2	-
Channel Islands	-	16	-
Croatia	-	52	-
Georgia	-	6	-
Former Yugoslav Republic of Macedonia	-	14	-
Isle of Man	-	11	-
Kazakhstan	-	14	-
Kosovo	-	1	-
Moldova	-	1	-
Monaco	-	1	-
Montenegro	-	18	-
Russia	-	28	-
Serbia	-	115	-
Ukraine	-	1	-
MEDITERRANEAN AND MIDDLE-EAST			
Algeria	-	14	-
Bahrain	15	98	-
Egypt	-	226	1
Iran	-	61	-
Iraq	-	49	-
Israel	-	1520	1
Jordan	-	79	-
Kuwait	-	145	-
Lebanon	-	154	1
Libya	-	9	-
Morocco	-	53	-
Occupied Palestinian Territory	-	104	-
Oman	-	19	-
Qatar	-	42	-
Saudi Arabia	-	294	2
Syria	-	5	-
Tunisia	-	10	-

Turkey	-	116	-
United Arab Emirates	-	110	-
Yemen	-	10	-
AFRICA			
Botswana	-	4	-
Cape Verde	-	6	-
Ethiopia	-	4	-
Gabon	-	1	-
Ivory Coast	-	2	-
Kenya	-	22	-
Mauritius	-	2	-
Namibia	-	4	-
Seychelles	-	3	-
South Africa	-	151	-
Sudan	-	2	-
Swaziland	-	2	-
Tanzania	-	8	-
Uganda	-	8	-
NORTH AMERICA			
Canada	-	10449	59
Mexico	423	16442	146
**USA	-	43771	302
CENTRAL AMERICA AND CARIBBEAN			
Antigua and Barbuda	-	3	-
Bahamas	-	29	-
Barbados	-	23	-
Belize	-	23	-
Bermuda	-	4	-
British Virgin Islands	-	2	-
Cayman Islands	-	43	1
Costa Rica	-	668	21
Cuba	14	234	-
Dominica	-	1	-
Dominican Republic	-	131	3
El Salvador	-	556	9
Grenada	-	1	-
Guatemala	100	558	10
Guyana	-	5	-
Haiti	-	3	-
Honduras	-	169	4
Jamaica	-	53	2

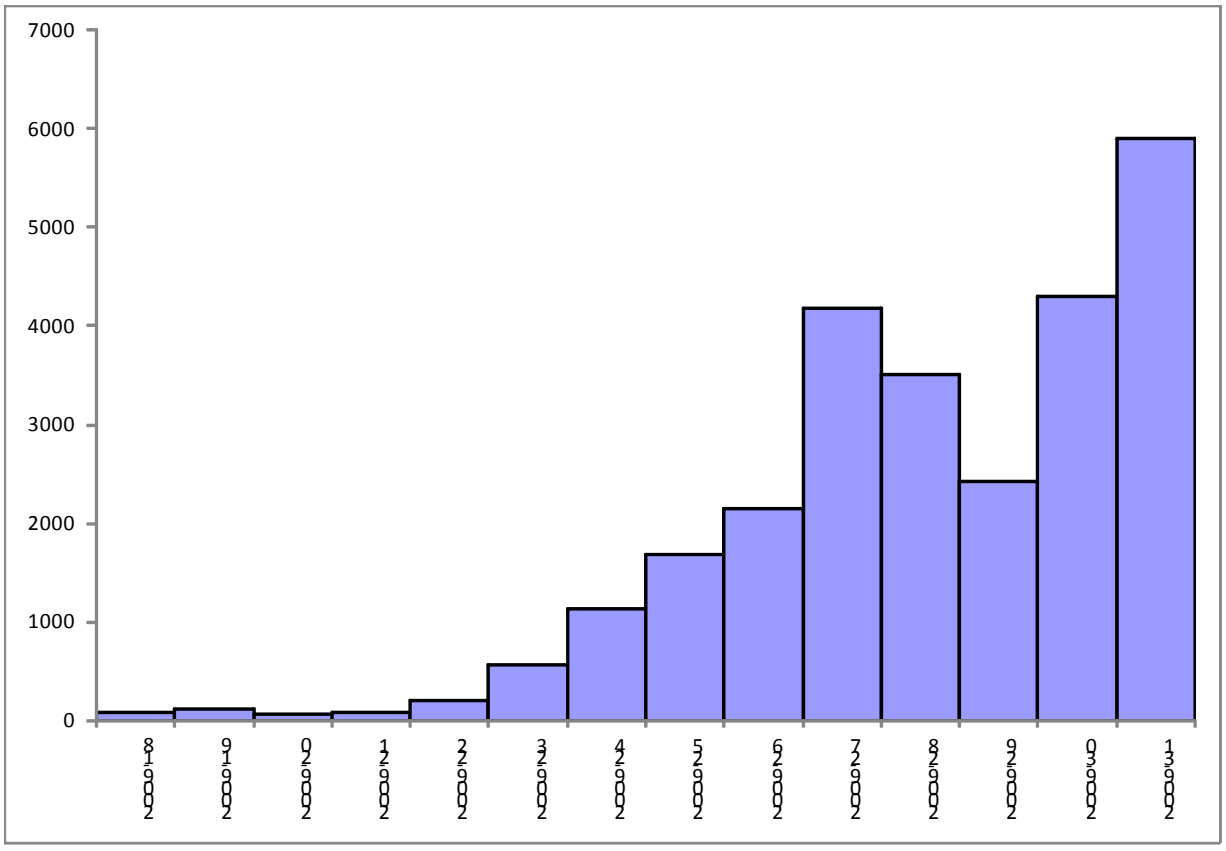
Nicaragua	-	432	-
Panama	-	571	2
Saint Kitts and Nevis	-	3	1
Saint Lucia	-	3	-
Saint Vincent	-	1	-
Suriname	-	14	-
Trinidad-Tobago	-	97	-
SOUTH AMERICA			
Argentina	-	3056	165
Bolivia	25	946	7
Brazil	-	1566	34
Chile	-	11641	79
Colombia	11	270	17
Ecuador	-	696	17
Paraguay	-	195	14
Peru	737	4029	29
Uruguay	-	550	22
Venezuela	-	426	2
NORTH-EAST AND SOUTH ASIA			
Afghanistan	-	15	-
Bangladesh	-	30	-
Bhutan	-	2	-
China (mainland)	87	2090	-
Hong Kong SAR China	214	3673	1
India	11	509	-
Japan	-	5022	-
Macao SAR China	7	181	-
Maldives	-	1	-
Nepal	-	17	-
South Korea	35	1399	-
Sri Lanka	-	53	-
Taiwan	-	1280	1
SOUTH-EAST ASIA			
Brunei Darussalam	452	786	1
Cambodia	-	17	-
Indonesia	16	495	1
Laos Peoples Democratic Republic	-	51	1
Malaysia	69	1371	4
Myanmar	1	10	-
Philippines	539	3207	8
Singapore	-	1217	5
Thailand	-	8879	65

Vietnam	31	794	-
AUSTRALIA AND PACIFIC			
Australia	559	21668	61
Cook Islands	-	1	-
Fiji	-	97	-
Micronesia	-	1	-
New Zealand	28	2797	13
Papua New Guinea	-	1	-
Republic of Palau	-	1	-
Samoa	-	37	-
Solomon Islands	-	2	-
Tonga	-	9	1
Vanuatu	-	3	-
TOTAL	**3273**	**156902**	**1109**

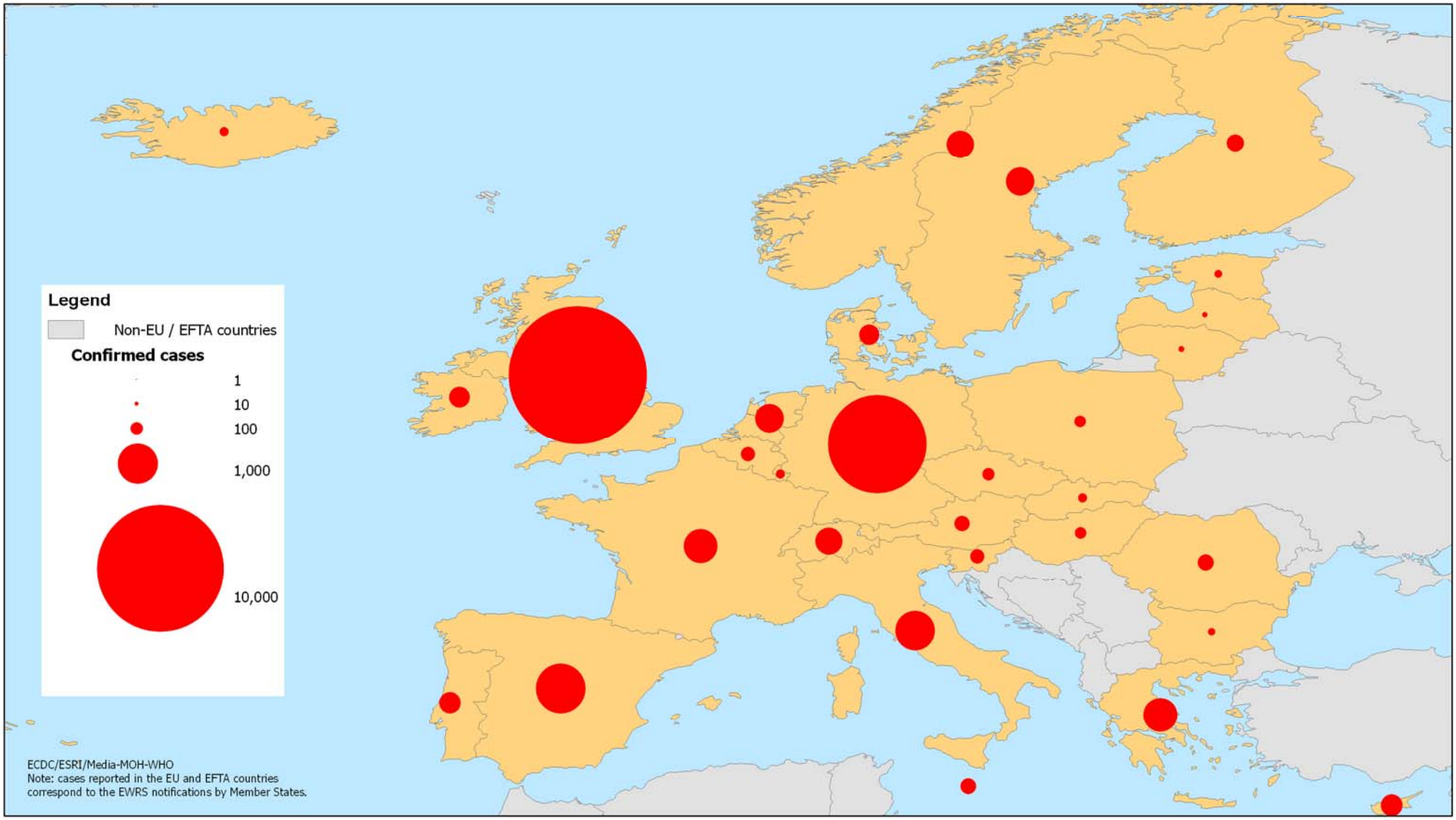
Note: cases reported in non-EU and EFTA countries correspond to cases published on Ministry of Health websites, or through WHO, or through credible media source quoting national authorities. Therefore, some of these cases may be taken out at a later stage if not validated.

* Deaths are included in the cumulative number of confirmed cases
**Cases in the US include both probable and confirmed cases. They also include confirmed cases from Puerto Rico, American Samoa, Guam and Virgin Islands.

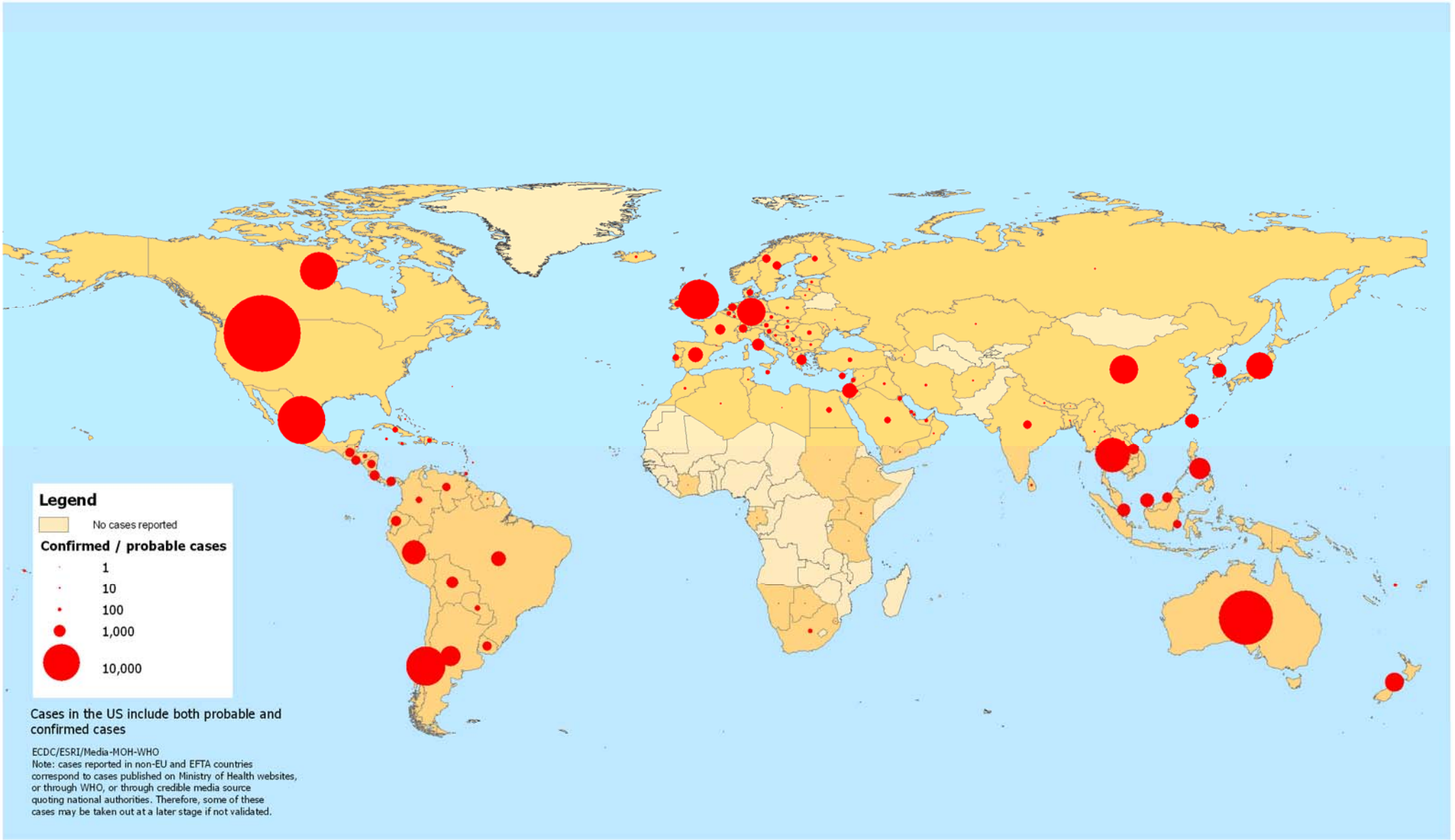
Figure 1: Distribution of confirmed cases of influenza A(H1N1)v infection by week of notification, EU and EFTA countries, 29 April to 31 July 2009



Reported cumulative number of confirmed cases of influenza A(H1N1)v in EU and EFTA countries, as of 31 July 2009, 16:00 hours CEST



Reported cumulative number of confirmed cases of influenza A(H1N1)v by country, as of 31 July 2009, 16:00 hours CEST



ECDC SURVEILLANCE REPORT

PANDEMIC (H1N1) 2009

Weekly report

Individual Case Reports

EU and EEA countries

As of 27 July 2009

Summary

The pandemic of influenza A(H1N1)v is spreading despite the influenza season is over. Community transmission is ongoing in several of the 27 EU and three European Economic Area (EEA) and EFTA countries, Iceland, Liechtenstein and Norway, and transmission between countries is frequent. The most affected age groups are persons under 20 years of age. Persons 60 years and older are less frequently affected, but are more frequently hospitalised and do have a higher proportion of underlying disease. The move to mitigation strategy in nearly half of the countries severely affects the current surveillance of individual cases. Ongoing monitoring of the disease is urgently needed and change of surveillance is currently implemented.

Acknowledgement

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

Due to the efforts countries made to update aggregated information through EWRS and their websites the continuous active monitoring of the pandemic since its start by the ECDC team was possible.

Introduction

On 21 April 2009, the United States Centers for Disease Control and Prevention (US CDC) reported two cases of influenza due to a new virus strain of mixed swine, avian and human origin, the so-called new influenza A(H1N1) virus (hereafter named A(H1N1)v virus) [1]. On 25 April, the European Centre for Disease Prevention and Control (ECDC) published a risk assessment, started developing tools to monitor the situation and support the countries of the European Union (EU) and European Free Trade Association (EFTA), and initiated its first situation report distributed daily to more than 700 stakeholders since then. The World Health Organisation (WHO) raised its pandemic alert level to phase 4 on 27 April and up-scaled again to phase 5 on 29 April. On 11 June, phase 6 was announced by WHO.

Aggregated and individual case reporting was implemented by ECDC using the Early Warning and Response System (EWRS). A workshop was held on 14/15 July at ECDC to discuss further surveillance strategies.

The objective of this report is to present the epidemiological situation in the 27 EU and the three countries in the European Economic Area (EEA) and EFTA, Iceland, Liechtenstein and Norway, hereafter called the EU+3 countries, on the basis of the surveillance data provided by the EU+3 countries through individual and aggregated case reports. Country specific reports are available [1-6].

Methods

Data used in this analysis of the epidemiological situation in the EU+3 countries, as of Monday 27 July 2009 10:00 CEST, include laboratory confirmed individual case reports posted by countries in the Early Warning and Response System (EWRS) and aggregated case reports provided daily through the EWRS or through other official communication channels.

Confirmed cases are defined as persons in whom the infection has been confirmed by RT-PCR, or by viral culture or by a four-fold rise in influenza A(H1N1)v-specific neutralising antibodies. The latter implies, according to the EU case definition, the need for paired sera from the acute phase of illness and from the convalescent stage 10-14 days later [2].

While countries with fewer cases are uploading data directly into the surveillance database at ECDC, Spain, the United Kingdom (UK), (who both have high number of cases) Belgium, Slovenia and Malta, are providing extracts from their national databases, which are then imported into the ECDC database. Re-coding of some of the variables is necessary

Cases which are not explicitly reported having been exposed during travel in an affected country (imported or travel related cases) are considered to have been infected in their own country.

Due to the fact that detailed symptoms are not available for the majority of cases, and that no denominator can be defined, this analysis describes groups of symptoms rather than detailed symptoms. The distribution of symptoms is described among symptomatic patients only. The proportion of asymptomatic persons cannot be assessed with the current data available.

Table 1 Reported aggregated and individual number of cases of influenza A(H1N1)v infection, proportion of individually reported cases, last updates and date of changing to mitigation strategy of EU+3 countries, as of 27 July 2009

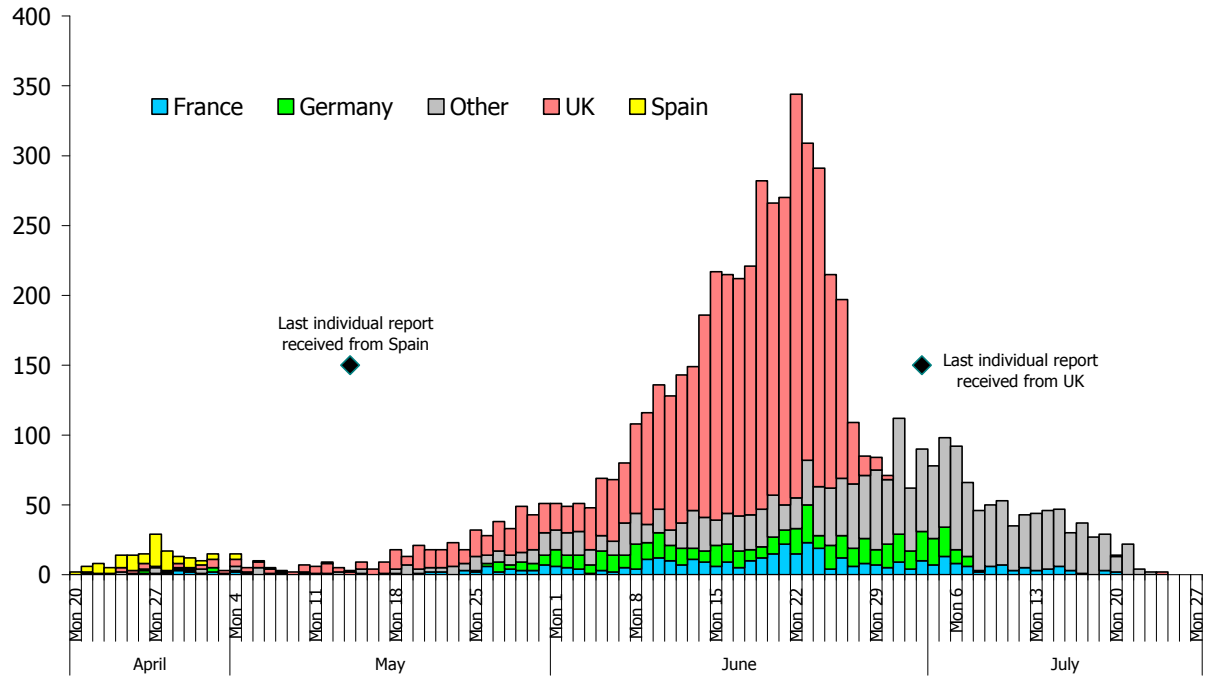
Country	Aggregated case reports	Individual case reports			
	Total	Total	%	Last update	Date of changing to mitigation strategy
Austria	97	64	66	21 July	-
Belgium	126	124	98	13 July	13 July
Bulgaria	29	26	90	23 July	-
Cyprus	297	205	69	13 July	17 July
Czech Republic	43	40	93	27 July	9 July
Denmark	180	97	54	17 July	7 July
Estonia	34	31	91	26 July	
Finland	167	164	98	24 July	22 July
France**	628	554	88	22 July	23 July
Germany	2,844	704	25	10 July	-
Greece	520	0	0		16 July
Hungary	59	47	80	24 July	-
Iceland	23	4	17	22 June	-
Ireland	205	107	52	23 July	16 July
Italy	618	134	22	9 July	-
Latvia	12	1	8	25 June	-
Lithuania	10	10	100	24 July	-
Luxemburg	38	35	92	23 July	-
Malta	123	106	86	20 July	8 July
Netherlands***	273	197	72	22 July	24 July
Norway	245	60	24	16 July	*
Poland	57	47	82	25 July	-
Portugal	226	149	66	24 July	-
Romania	107	75	70	24 July	-
Slovakia	40	35	88	23 July	-
Slovenia	102	7	7	3 July	-
Spain	1,538	113	7	14 May	-
Sweden	390	172	44	15 July	15 July
United Kingdom	11,159	6,002	54	3 July	10 July
Total	**20,190**	**9,310**	46		

* Norway never used containment strategy, but surveillance data are considered reliable

Cases reported from France include those reported from Reunion-Mayotte (10), Antilles-Guyane (9), French Polynesia (5) and French New Caledonia (46) * Cases from the Netherlands include those reported from Aruba and the Dutch Antilles

When analysing the individual data by country of reporting (figure 1), a drastic decrease in the number of cases in the 3rd week of June is due to the fact that the last report from the UK was received on 3 July.

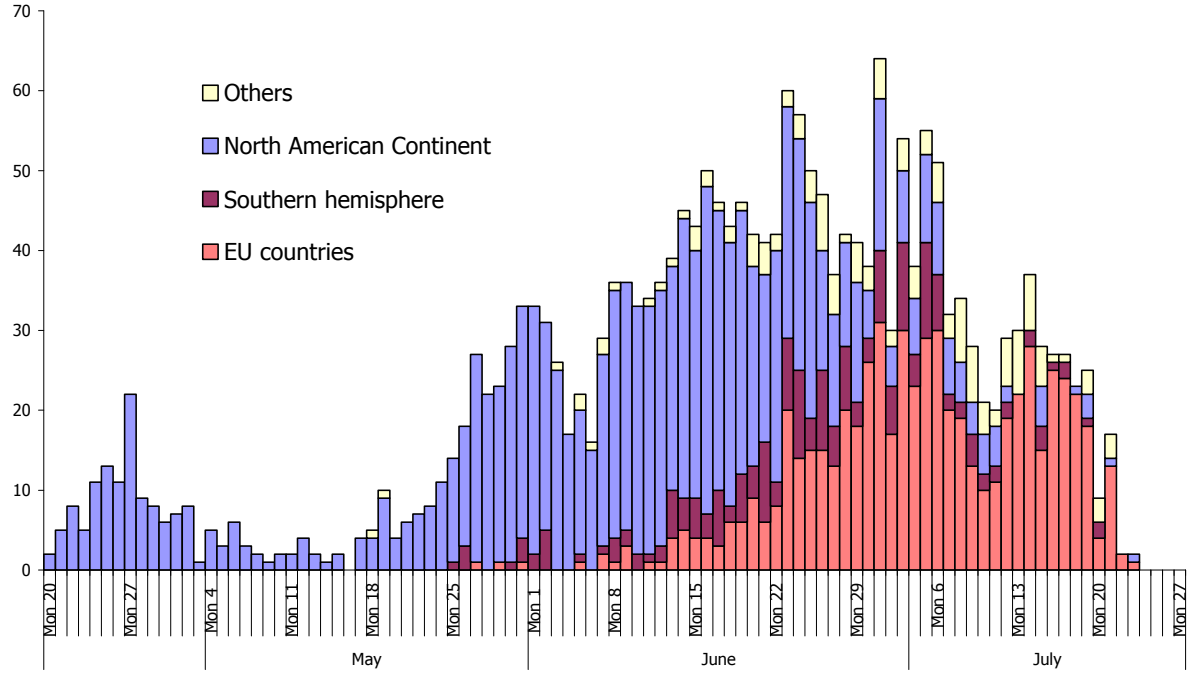
Figure 1 Number of cases of individual reports by onset of disease and country of reporting, 20 April until 27 July, 2009



Imported cases

Among the 2,393 travel related cases, only in 33 (1.4%) no probable country of infection was reported. More than half of the cases (1319), reported a travel to the North American sub-continent, 1,022 (76%) to the USA, 221 (17%) to Mexico and 62 (5%) to Canada. The rest reported a travel to more than one country. Cases with travel history to Mexico contributed mainly to the early imported cases, whereas cases with travel history to the US and Canada accounted for later cases imported from the North American sub-continent (figure 2).

Figure 2 Number of travel related cases by onset of disease and continent of travel, 20 April until 27 July, 2009 (n=2,393)

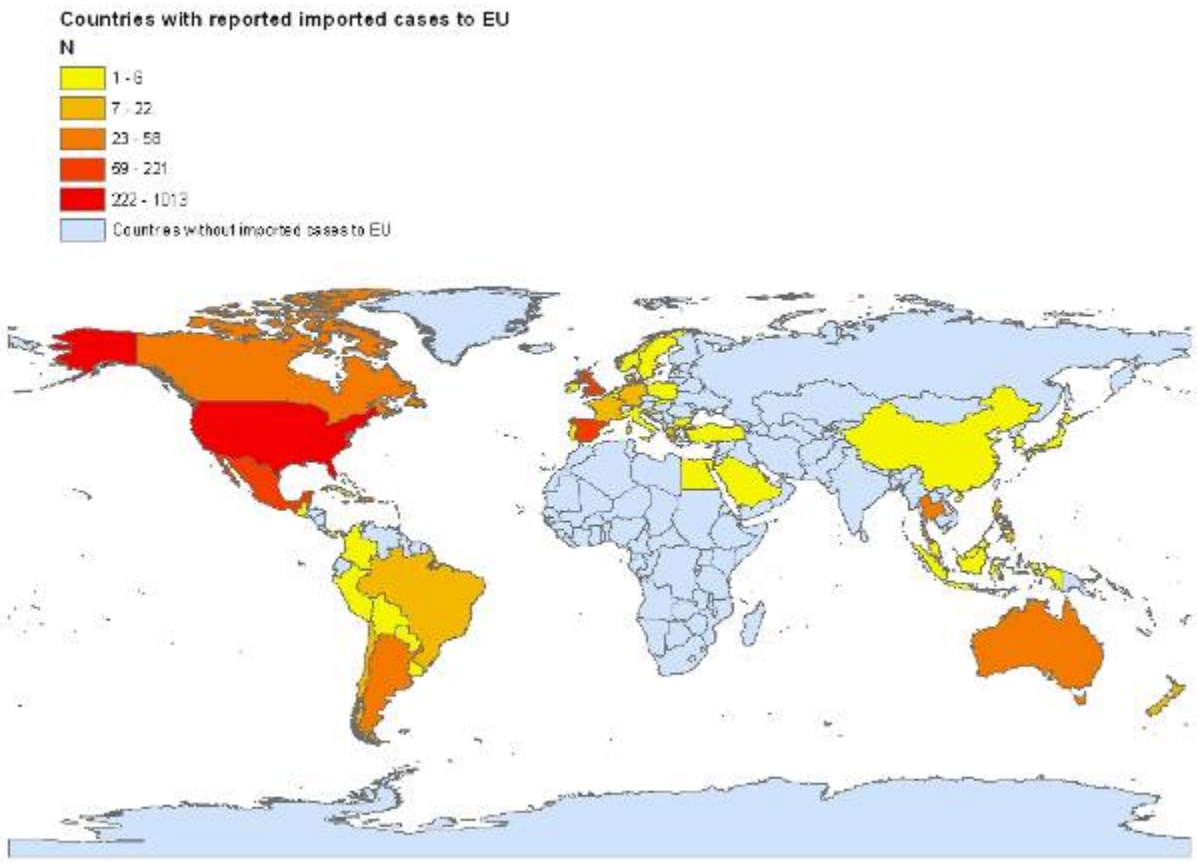


A travel history within the EU+3 countries was the second most common travel destination of imported cases and accounted for 28% of travel related cases (674). More than 1/3 of travel related cases to another EU country reported Spain as their destination (253) and nearly as many the UK (250). Cyprus as travel destination accounted for 9% of cases (58), followed by Greece, 4% (24), France (23) and Germany (19). Less than 10 cases with travel exposure to the following countries were reported: Belgium, Bulgaria and Ireland (7 each), Italy and Poland (5 each), Malta, Portugal and Netherlands (2 each), Austria, Norway and Slovakia (1 each). Seven cases reported a travel to more than one EU+3 country.

Central and South American travel destinations accounted for 6% or travel related cases in EU+3 countries (153): Argentina (52), Dominican Republic (35), Brazil (26), Chile (20), other countries with less than 10 cases.

Other frequent travel destinations were to the Southern hemisphere (3%) and Asian countries (3%): Australia (63), New Zealand (16), Thailand (41), Philippines (10), from all other countries of the Southern hemisphere less than 10 cases were imported to EU+3 countries. Four percent (87) of travel related cases in the EU reported other destinations world-wide (figure 2) but less than 10 cases had exposure in these countries (figure 3).

Figure 3 **Number of travel related cases by country, 20 April until 27 July, 2009 (n=2,360)**



The median age of travel related cases is 25 years, ranging from 1 month to 82 years of age. More than 1/3 of cases were reported in the 20 to 29 year age group. Nine percent of cases were older than 50 years of age. The male to female ratio of travel related cases was 1.2 (table 2).

Table 2 **Age and gender distribution of travel related, 20 April and 27 July (n=2,342)**

Age group	Female	Male	Total	Percentage of total
Under 10	82	122	204	8.7
10 to 19	222	222	444	19.0
20 to 29	396	483	879	37.5
30 to 39	165	187	352	15.0
40 to 49	92	151	243	10.4
50 to 59	76	72	148	6.3
≥60	29	43	72	3.1
Total	**1,062**	**1,280**	**2,342**	**100**

Domestic cases

The majority of cases (74%, 6,918) were classified as domestic cases, who had either no travel history (96%, 6,665) or unknown travel history (4%, 253).

In the EU+3 countries the percentage of domestic cases among individually reported cases was 74%, with wide variation among countries: 6% in Luxembourg and Slovakia and 94% in Cyprus. No domestic cases were reported from Latvia and Slovenia, Greece did not report individual cases (table 3).

Table 3 Aggregated and individually reported cases by country and travel exposure, proportion of domestic cases and cumulative incidence of domestic cases, 20 April and 27 July

Country	Individually reported cases	Domestic cases individually reported	Percentage of domestic cases among individually reported cases
Austria	64	17	27
Belgium	124	52	42
Bulgaria	26	6	23
Cyprus	205	193	94
Czech Republic	40	4	10
Denmark	97	44	45
Estonia	31	10	32
Finland	164	29	18
France	554	240	43
Germany	704	393	56
Greece	0	-	-
Hungary	47	14	30
Iceland	4	1	25
Ireland	107	11	10
Italy	134	16	12
Latvia	1	-	-
Lithuania	10	1	10
Luxemburg	35	2	6
Malta	106	76	72
Netherlands	197	74	38
Norway	60	9	15
Poland	47	10	21
Portugal	149	26	17

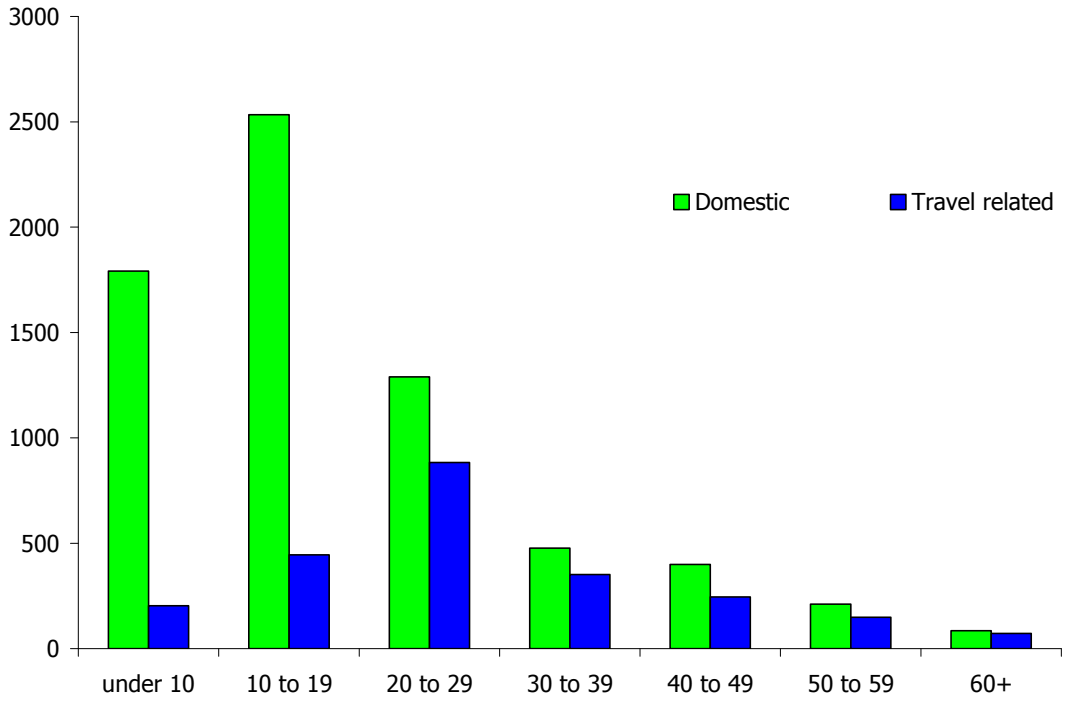
Romania	75	20	27
Slovakia	35	2	6
Slovenia	7	-	-
Spain	113	39	35
Sweden	172	43	25
United Kingdom	6,002	5,586	93
Total	**9,310**	**6,918**	**74**

Most travel related cases with travel history to another EU+3 country reported a previous travel exposure to Spain (256), the UK (251), Cyprus (58), France and Greece (24) (table 3).

The median age of domestic cases is 14 years, ranging from 1 month to 90 years compared to the median age of 25 years of travel related cases. Among the 6,787 cases with known age, 4,325 (64%) are below 20 years of age and less than 5% (296) are 50 years or older. The male to female ratio of domestic cases is 1.1.

The age distribution of domestic and travel related cases is different (figure 4): among travel related cases 64% are younger than 20 years of age compared to 28% of travel related cases ($p<0.0001$).

Figure 4 Distribution by age and travel status, 20 April and 27 July (n=9,137)



Hospitalisation

Overall in EU+3 countries, 10% of cases were reported having been hospitalised. The percentage of hospitalised cases varied among countries, between 2% in the UK and 96% in Austria and Romania (table 5).

Table 5 Number of individually reported cases, number of hospitalised cases and percentage of hospitalised cases by country, 20 April and 27 July

Country	Individually reported cases	Hospitalised cases	Percentage hospitalised (%)
Austria	54	52	96
Belgium	123	12	10
Bulgaria	26	19	73
Cyprus	204	46	23
Czech Republic	40	14	35
Denmark	73	10	14
Estonia	31	10	32
Finland	162	16	10
France	394	225	57
Germany	595	100	17
Greece*	-	-	-
Hungary	47	9	19
Iceland**	-	-	-
Ireland	81	3	4
Italy	129	35	27
Latvia*	-	1	-
Lithuania	10	2	20
Luxembourg	35	2	6
Malta	106	6	6
Netherlands	185	1	1
Norway	60	4	7
Poland	39	34	87
Portugal	138	95	69
Romania	75	72	96
Slovakia	34	23	68
Slovenia**	-	-	-
Spain*	-	-	-
Sweden	125	8	6

United Kingdom	5,895	90	2
Total	**8,661**	**889**	**10**

* no data available ** no cases hospitalised

Cases with underlying disease were more frequently hospitalised (32%) compared to patients without underlying diseases (10%) (n=8,673, p<0.0001).

Complications

The information regarding complications is scarce. Among 1,674 cases with available information 50 (3%) were reported with complications. Pneumonia was reported in 28 (56%) of those, of which 20 were reported having been admitted to hospital. In the individual case reports one fatal case is reported, whereas in the aggregated reports 35 deaths during the same period were reported: 30 from the UK, 4 from Spain and one from Hungary.

Clinical presentation

Information on clinical symptoms is available for 5,220 cases. No information is available from Belgium and Slovenia. Only four cases were reported to be asymptomatic. Respiratory symptoms were the most frequently reported symptoms among symptomatic cases (87%), followed by fever (82%) and gastro-intestinal symptoms (13%).

Gastro-intestinal symptoms were more frequently reported from cases less than 20 years of age (15%) when compared with older cases (12%) (p<0.001).

Treatment and prophylaxis

Among 8,009 cases with available information on antiviral treatment, 55% were reported having received antiviral treatment. The proportion of cases receiving treatment varied between countries: 15% of cases in Slovakia to 100% in Estonia, Slovenia and Latvia (only one case).

Underlying preconditions

In total, 290 cases were reported having underlying preconditions, which are considered risk factors for severe disease. Among the 192 cases with available information about underlying precondition, lung disease was the most frequently reported condition (57%, n=109) followed by pregnancy (13%, n=25), diabetes (9%, n=17) and heart disease (8%, n=16). Significantly more cases with underlying preconditions were treated (75%) when compared with previous healthy cases (55%) (p<0.0001).

The proportion of cases with underlying disease increased by age: in the age group of 60 years and older 20% were reported to have an underlying disease (table 6).

Table 6 Number of individually reported cases, number of cases with underlying preconditions and proportion by age group

Age groups	Individually reported cases	Cases with underlying preconditions	Percentage (%)
under 10	1,996	26	1.3
10 to 19	2,978	63	2.1
20 to 29	2,172	64	2.9
30 to 39	829	49	5.9
40 to 49	645	32	5.0
50 to 59	360	23	6.4
60+	157	32	20.4

Total	**9,137**	**289**	**3.2**

The vaccination status was reported from 7,792 cases, of which 2.5% (n=193) were reported having been vaccinated against seasonal influenza. The vaccination coverage was significantly higher among persons with reported underlying preconditions (30%) compared to previous healthy cases (2.3%) ($p<0.0001$).

Discussion

The fact that many countries are moving to mitigation strategy will significantly influence the surveillance activities. Mitigation also considers change of surveillance to sentinel reporting of influenza like illness rather than exhaustive reporting of cases.

The last report from the UK was received on 3 July, which accounted for the majority of reported cases. The UK reported to have moved from containment to mitigation on 10 July which also resulted in a change of surveillance. The decrease in the number of cases reported during the last week in June is due to the end of reporting UK data which accounted for nearly 2/3 of cases. The drop in the epidemic curve in July is due to due to the reporting delay, but also due to the fact that nearly half of the countries have changed to mitigation, which includes change of surveillance strategy.

The data quality of underlying preconditions may be not accurate especially when the number of cases is high in a country (personal communication from the UK).

Conclusion

The ongoing pandemic is continuing to spread and the number of cases is rapidly increasing despite the fact that the seasonal influenza season is considered to be over. In several countries, in-country transmission is probably ongoing.

Persons with underlying preconditions are more vulnerable group for complications and severe disease and are getting more frequently antiviral treatment and are more frequently vaccinated against seasonal influenza. Nevertheless, the estimated seasonal influenza vaccination coverage is well below its target to be achieved in risk groups.

The age groups affected are important to be continuously monitored to help guiding target age groups for pandemic vaccination with initially limited vaccines. The surveillance of individually reported cases will soon stop and other surveillance strategies are needed. A meeting with stakeholders from EU+3 countries was recently held in Stockholm, and surveillance of ILI and SARI (severe acute respiratory infection) will be two important strategies. Serologic studies will be needed to assess the proportion of asymptomatic cases, and the ability of asymptomatic cases to transmit the infection. In addition, specific other studies are needed to answer the many open questions about this disease.

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