

ECDC SURVEILLANCE REPORT

Pandemic (H1N1) 2009

Weekly report: Individual case reports

EU/EEA countries

31 July 2009

Summary

The pandemic A(H1N1) 2009 is still spreading despite the fact that the regular influenza season is considered to be over. Community transmission continues in several of the 27 EU countries and the three EEA/EFTA countries (Iceland, Liechtenstein and Norway), and transmission between countries is frequent. The most seriously affected age group is persons under 20 years of age. Persons 60 years and older are less frequently affected, but are more frequently hospitalised and have a higher proportion of underlying disease.

The move to a mitigation strategy in nearly half of the monitored countries negatively affects the surveillance of individual cases. However, continued monitoring of the disease is urgently needed, and adaptations of the current surveillance strategies are already underway in several countries.

Acknowledgements

All data in this report were provided by the national contact points for surveillance and the Early Warning and Response System (EWRS) of the EU and EEA countries. ECDC would like to acknowledge the commitment and efforts of all individuals and teams that ensure the timely reporting of data from their countries.

The uninterrupted reporting of aggregated data by ECDC's partner countries (via EWRS and national websites) has made it possible for ECDC to continuously monitor the current pandemic from the very beginning.

Introduction

On 21 April 2009, the United States Centers for Disease Control and Prevention (US CDC) reported two cases of influenza caused by a new virus strain, a combination of genes from human, bird and swine influenzas, the so-called new influenza A(H1N1) virus, hereafter called 'A(H1N1)v virus' [1]. On 25 April, the European Centre for Disease Prevention and Control (ECDC) published an initial risk assessment, started to develop tools for both monitoring the situation and supporting the countries of the European Union (EU)/European Free Trade Association (EFTA), and published a first situation report, now distributed daily to more than 700 stakeholders. The World Health Organization (WHO) raised its pandemic alert level to phase 4 on 27 April, and again to phase 5 on 29 April. On 11 June, phase 6 was announced.

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

This report presents the epidemiological situation in the 27 EU countries plus Iceland, Liechtenstein, and Norway, hereafter called the 'EU+3 countries', based on 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 (last updated on 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 who are confirmed infected by RT-PCR, 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 to 14 days later [2].

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

Cases which were not explicitly reported as 'exposed while travelling in an affected country' (imported or travel-related cases) were 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 pandemic (H1N1) 2009 cases, proportion of individually reported cases, last updates, and date of changing to mitigation strategy of EU+3 countries, as of 27 July 2009

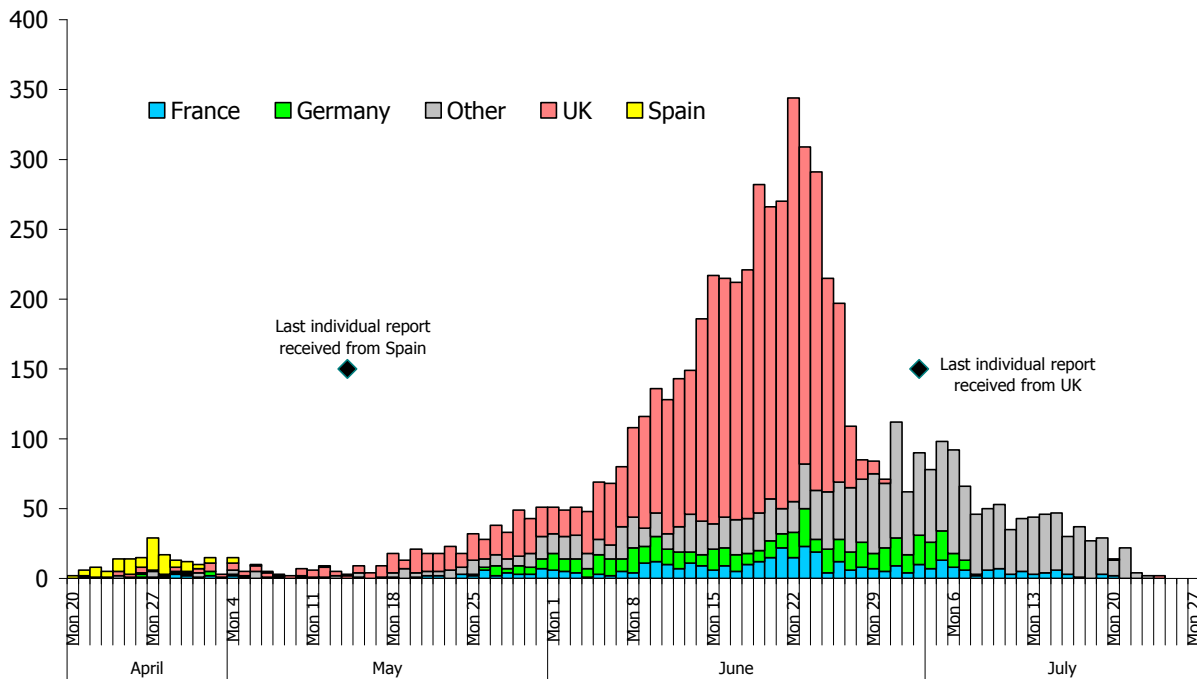
Country	Aggregated case reports		Individual case reports			Date of changing to mitigation strategy
	Total	Total	%	Last update		
Austria	97	64	66	21 July	-	
Belgium	126	124	98	13 July	13 July	
Bulgaria	29	26	90	23 July	-	
Cyprus	297	205	69	13 July	17 July	
Czech Republic	43	40	93	27 July	9 July	
Denmark	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	-	
Luxembourg	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 applied a 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.

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

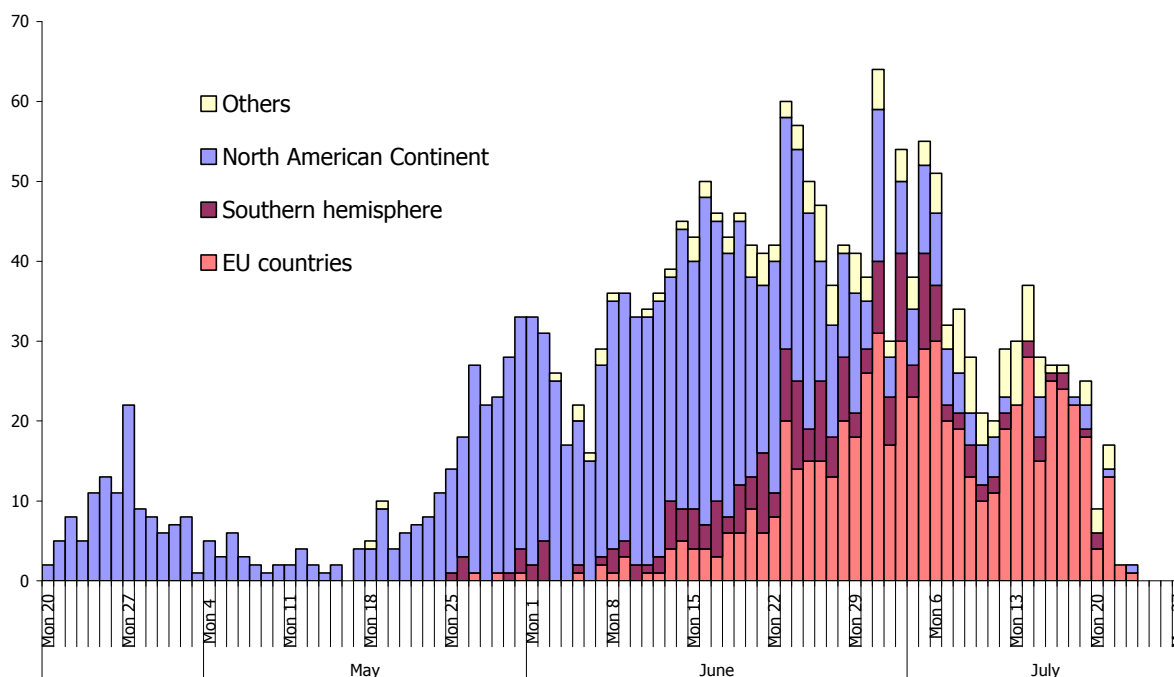


Note: The marked decrease in the number of cases in the third week of June (Figure 1) is due to the fact that the last report from the UK was received on 3 July 2009.

Imported cases

Of the 2 393 travel-related cases, only 33 (1.4 %) reported no likely country of infection. More than half of the cases (1 319) reported trips to North America: 1 022 (76 %) to the USA, 221 (17 %) to Mexico, and 62 (5 %) to Canada. The remainder of cases reported trips to more than one country. Cases with a travel history to Mexico contributed mainly to the early imported cases, whereas cases with a travel history to the US and Canada accounted for cases reported later (Figure 2).

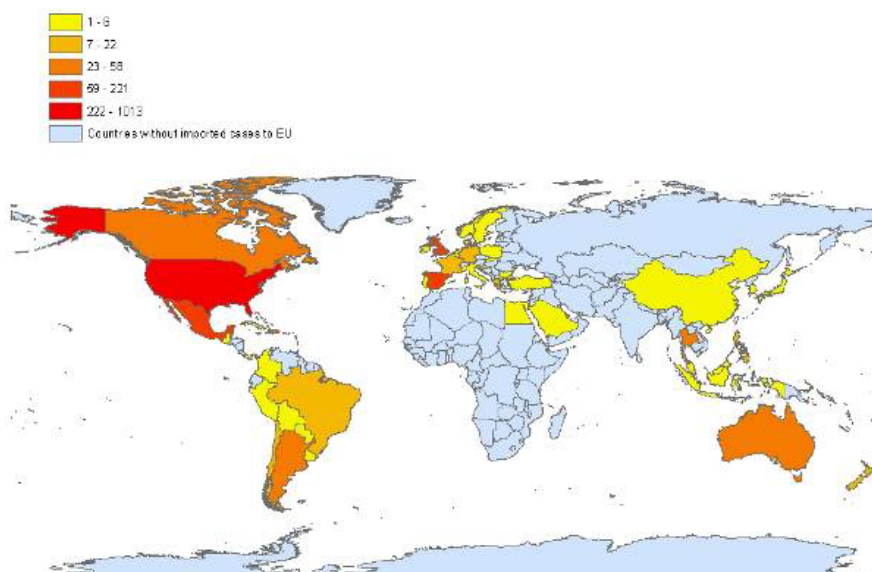
Figure 2. Number of travel-related cases by onset of disease and continent of travel, 20 April to 27 July 2009 (n=2,393)



The EU+3 countries were the second most commonly reported travel destinations for imported cases and accounted for 28 % of all travel-related cases (674). More than one third of travel-related cases to another EU country reported Spain as their destination (253); 250 named the UK. Cyprus accounted for 9 % of all travel-related cases (58), followed by Greece (4 %, 24 cases), France (23), and Germany (19). Fewer than ten cases with travel exposure were reported for the following countries: 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 trips to more than one EU+3 country.

Central and South American travel destinations accounted for 6 % of travel-related cases in the EU+3 countries (153): Argentina (52), Dominican Republic (35), Brazil (26), and Chile (20); all other countries in Central and South America were associated with fewer than 10 cases.

Other frequent travel destinations included the southern hemisphere and Asian countries: Australia (63), New Zealand (16), Thailand (41), Philippines (10); all other countries in the southern hemisphere were associated with fewer than 10 cases. Four percent (87) of travel-related cases in the EU reported other international destinations (Figure 2), but fewer than 10 cases were exposed to pandemic (H1N1) 2009 while travelling in these countries (Figure 3).

Figure 3. Number of travel-related cases by country, 20 April to 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 one third 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 cases, 20 April to 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 with no travel history (96 %, 6 665) or an unknown travel history (4 %, 253).

In the EU+3 countries, the percentage of domestic cases among individually reported cases was 74 %. This rate varied widely among countries: domestic cases accounted for 6 % of all cases in Luxembourg and Slovakia, as opposed to 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 to 27 July

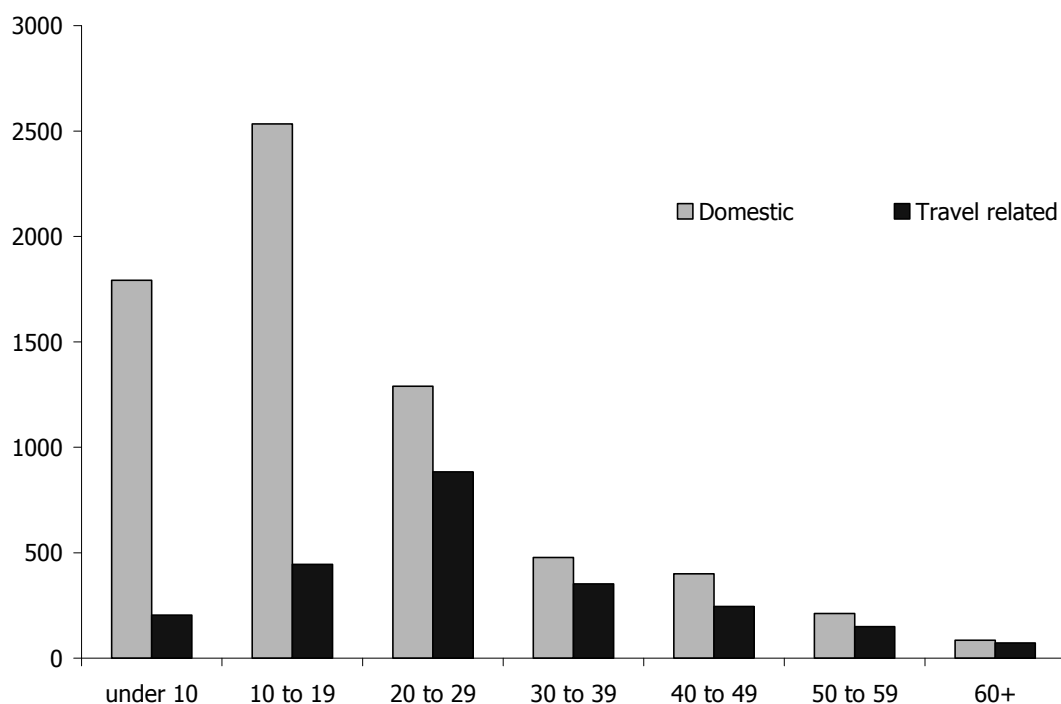
Country	Individually reported cases	Domestic cases individually reported	Percentage of domestic cases among individually reported cases
Austria	64	17	27
Belgium	124	52	42
Bulgaria	26	6	23
Cyprus	205	193	94
Czech Republic	40	4	10
Denmark	97	44	45
Estonia	31	10	32

Country	Individually reported cases	Domestic cases individually reported	Percentage of domestic cases among individually reported cases
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 a travel history to another EU+3 country reported 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 one month to 90 years. The median age of travel-related cases is 25 years. Among the 6 787 cases with known age, 4 325 (64 %) are below 20 years of age, and fewer 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 depicted in Figure 4.

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

Hospitalisation

In EU+3 countries, 10 % of all cases were hospitalised. The percentage of hospitalised cases varied widely 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 to 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

Country	Individually reported cases	Hospitalised cases	Percentage hospitalised (%)
Slovakia	34	23	68
Slovenia*	-	-	-
Spain**	-	-	-
Sweden	125	8	6
United Kingdom	5,895	90	2
Total	8,661	889	10

* no cases hospitalised

** no data available

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

Complications

Information regarding complications is scarce. Of the 1 674 cases for which information was available, 50 (3 %) reported complications. Pneumonia was reported in 28 cases (56 %), 20 of those cases were hospitalised. In the individual case reports, one fatal case was reported. In the aggregated reports, 35 deaths were reported during the same period: 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 in cases under the age of 20 (15 %) as compared with older cases (12 %) (p<0.001).

Treatment and prophylaxis

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

Underlying preconditions

In total, 290 cases with underlying preconditions were reported. Those preconditions are considered risk factors for severe disease. Among the 192 cases with available information about underlying preconditions, 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 %) as compared with previously healthy cases (55 %) (p<0.0001).

The proportion of cases with underlying disease increased with age: in the age group of 60 years and older, 20 % were reported to suffer from 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 to be vaccinated against seasonal influenza. The vaccination coverage was significantly higher among persons with reported underlying preconditions (30 %), compared with previously healthy cases (2.3 %) (p<0.0001).

Discussion

The fact that many countries are moving to a mitigation strategy will significantly influence surveillance activities. The shift to mitigation also necessitates a change of surveillance strategies, from exhaustive case reporting to sentinel reporting of influenza-like illness (ILI).

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

The data for underlying preconditions may be not very accurate, especially when there are particularly high numbers of cases in a country (personal communication from the UK).

Conclusion

The pandemic A(H1N1) 2009 is still spreading despite the fact that the regular influenza season is considered to be over. In-country transmission is probably still occurring in several countries.

Persons with underlying preconditions are more susceptible to complications and severe disease. They receive antiviral treatment more frequently and are more frequently vaccinated against seasonal influenza; however, seasonal influenza vaccination for risk groups is still well below target.

It is important to continue monitoring all affected age groups in order to help determine priority groups for vaccination, as the vaccine will initially be only available in limited quantities. The surveillance of individually reported cases will soon be terminated in many countries and different surveillance strategies will be employed. During a recent meeting with stakeholders from the EU+3 countries in Stockholm, two increasingly relevant strategies were pointed out: surveillance of ILI (influenza-like illness) and SARI (severe acute respiratory infection). Serological studies are needed to estimate the proportion of asymptomatic cases and assess the ability of asymptomatic cases to transmit the infection. In addition, further studies are needed to answer the many remaining questions about this disease.

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