

ECDC SITUATION REPORT

Influenza A(H1N1) infection

Update 03 June 2009, 17:00 hours CEST

Main developments in past 24 hours

- 106 new cases confirmed from EU and EFTA countries of which 84 from the UK;
- Nicaragua, Bermuda, Saudi Arabia and Egypt confirmed their first cases today;
- 803 new cases are reported from non EU and EFTA countries;

This report is based on official information provided by the national public health websites, or through other official communication channels. In addition, outside of the EU and EFTA countries, media reports from credible sources are included when quoting national authorities. An update on the number of confirmed cases as of 3 June, 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.

Epidemiological update

In the past 24 hours, 106 cases were confirmed in the EU and EFTA countries (Table 1). New confirmed cases were reported from Austria (1), France (10), Germany (6), Hungary (1), Ireland (2), Romania (1), Slovakia (1) and the United Kingdom (84).

One of the newly confirmed cases in Germany was probably infected in the UK.

Outside of the EU and EFTA countries, a total of 19,357 cases are currently reported, of which 803 in the last 24 hours. The majority of these newly confirmed cases are from Mexico (534), Australia (132) and Chile (47) (Table 2).

New countries reporting confirmed cases include Bermuda (overseas territory of the UK), Egypt, Nicaragua and Saudi Arabia (one each). The confirmed case from Saudi Arabia had recently returned from the Philippines.

Assessment and response in the EU and EFTA countries

Twenty-six of the 31 EU and EFTA countries have reported cases. Media and official national reports are indicating that confirmed cases have been identified in relation with exposure in the EU and EFTA countries. Greece and Germany reported cases which acquired the infection in the UK. Nevertheless, no sustained community transmission has yet been declared from EU and EFTA countries and the assessment for the EU and EFTA countries does not change.

ECDC, in collaboration with the Member States, the European Commission and the World Health Organisation, continues to closely monitor this rapidly evolving situation, and provide daily updates on its website.

The rapid evolution of influenza A (H1N1)

Until 2nd June, five of six WHO Regions reported cases. The WHO Region of Africa (AFRO), which does not include Egypt, Libya, Sudan, Morocco and Somalia, has not reported cases so far. The majority of the reported cases worldwide are originating from the Americas (AMRO) as can be seen on figure 1a. The trend analysis in Figure 1b, using a semi-logarithmic scale, shows a rapid increase in the number of cases in the Americas (AMRO) as well as in the European region (EURO) since end of April 2009. The increase in the Western Pacific WHO Region (WPRO) was initially less significant but showed a sharp increase in the third week of May, in relation with cases reported from Japan. The trend in the WPRO Region suggests faster increase in the reported cases in the past 8 days, when compared with the AMRO and EURO Regions, due to the rapid spread of the infection in Australia. The South East Asian WHO Region (SEARO) reported the first cases three weeks after the alert of WHO on 25 April and the Eastern Mediterranean Region (EMRO, which is including some countries of the African continent) four weeks after the 25 April. The trend in the number of reported cases from SEARO seems to be similar to the one from WPRO during the last week.

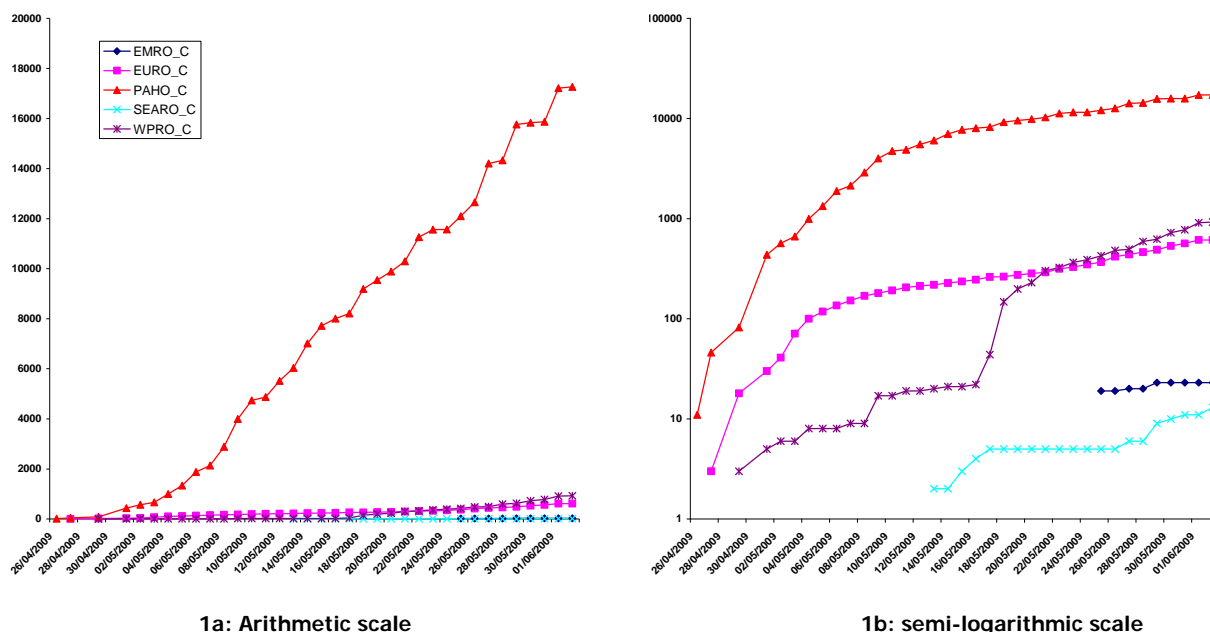


Figure 1: Cumulative distribution of cases of influenza A(H1N1) by day of reporting and WHO Region, 28 April – 2 June 2009 (n = 19,159)

The comparison of trends in reported cases is potentially biased by the sensitivity of surveillance systems, the change in surveillance strategies, the testing strategies and the availability of test-kits. In addition, the case definitions used differ per country, e.g. the USA report the cumulative number of confirmed and probable cases, while other countries report only laboratory confirmed cases.

Current issues related to pandemic vaccine development

Pandemic influenza prevention includes development of a vaccine based on the current circulating influenza A(H1N1) strain. A number of international public health agencies and regulatory authorities including WHO, ECDC, CDC, EMEA and FDA are now considering the following issues for the development and production of a vaccine:

Vaccine seed strains

Several optional techniques for production of vaccines are available. Wild-type virus isolated from an individual in California is the basis for all these technique developments. During the month of May *wild-type* influenza A(H1N1) virus was distributed to vaccine manufacturers as the first tool for their coming production. Last week the WHO Collaborating Centres have released *vaccine seed strains* produced both by the technique reversed genetic and re-assortment. Most manufacturers will choose vaccine seed virus produced by the technique re-assortment. Re-assorted strains carry the recommended hemagglutinin and neuraminidase antigens on the surface of a backbone of a fast growing laboratory influenza strain. These re-assorted strains can be grown in egg- or cell-culture, depending on the preference of the manufacturer.

Adjuvants

Several manufacturers are looking into the possibility of using new adjuvants. Adjuvants are compounds added to the vaccine to increase the immunogenicity of the vaccine. Classically, for decades aluminium hydroxide has been used as adjuvant. New compounds using oil-in-water emulsions stimulate the immune system more effectively. Using an adjuvant may be antigen sparing and may induce a broader immune response to different related influenza strains. Several new adjuvants are present in licensed vaccines on the European market and the experience from these may now be valuable.

Clinical trials

Each new vaccine needs to undergo clinical trials before authorisation. Manufacturers are now planning clinical trials to be performed when the first vaccine lots are available. Immunogenicity and safety will be evaluated in infants, children, teenagers, adults and elderly. The precise data requirements are not yet established and will depend on the severity of the disease as the situation evolves. For example, if influenza A (H1N1) continues to develop into a more severe clinical disease than what is seen now, clinical trials may be accelerated and data requirements for licensure adjusted accordingly.

Vaccine safety

Vaccine safety will be monitored in the initial clinical trials. For more rare adverse event each manufacturer is required by the EMEA document on Risk Management Plans to present how they will follow safety and effectiveness in the post-licensure phase in the general population. Monitoring adverse events in pregnant women will be enhanced.

Vaccine availability

Vaccine availability will be affected by the time needed to produce the pandemic vaccine, the time needed for clinical trials and the time needed for the authorization process.

For further information see:

http://www.who.int/csr/disease/swineflu/frequently_asked_questions/vaccine_preparedness/en/

Table 1: Reported cumulative number of confirmed cases and of in-country transmission of influenza A(H1N1) as of 03 June 2009, 17:00 hours (CEST) in EU and EFTA countries

Country	Confirmed cases reported in the last 24h	Cumulative number of confirmed cases	Cumulative number of in-country transmission
Austria	1	2	-
Belgium	-	13	4
Bulgaria	-	1	-
Cyprus	-	1	-
Czech Republic	-	1	-
Denmark	-	1	-
Estonia	-	1	-
Finland	-	4	-
France	10	42	1
Germany	6	37	7
Greece	-	5	-
Hungary	1	2	-
Iceland	-	1	-
Ireland	2	7	-
Italy	-	30	2
Luxembourg	-	1	-
Netherlands	-	4	-
Norway	-	7	-
Poland	-	4	-
Portugal	-	2	-
Romania	1	6	2
Slovakia	1	3	1
Spain	-	180	84
Sweden	-	7	-
Switzerland	-	10	-
United Kingdom	84	339	158
Total	106	711	259

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

Table 2: Reported cumulative number of confirmed cases and deaths of influenza A(H1N1) as of 03 June 2009, 17:00 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*
EASTERN EUROPE AND CENTRAL ASIA			
Russian Federation	-	3	-
MEDITERRANEAN AND MIDDLE-EAST			
Bahrain	-	1	-
Egypt	1	1	-
Israel	-	33	-
Kuwait	-	18	-
Lebanon	-	3	-
Saudi Arabia	1	1	-
Turkey	1	5	-
United Arab Emirates	-	1	-
NORTH AMERICA			
Canada	-	1530	2

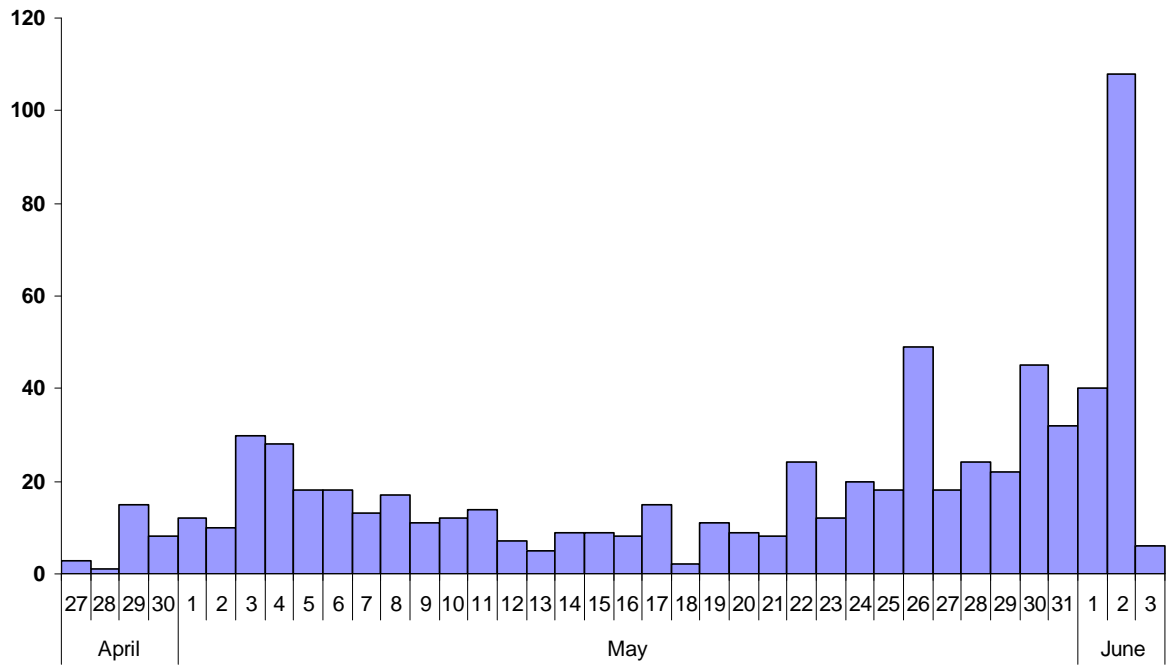
Mexico	534	5563	103
USA**	-	10054	17
CENTRAL AMERICA AND CARIBBEAN			
Bahamas	-	1	-
Bermuda	1	1	-
Costa Rica	13	50	1
Cuba	-	4	-
Dominican Republic	-	11	-
El Salvador	11	41	-
Guatemala	2	14	-
Honduras	-	2	-
Jamaica	-	2	-
Nicaragua	1	1	-
Panama	7	155	-
SOUTH AMERICA			
Argentina	13	144	-
Bolivia	-	3	-
Brazil	2	23	-
Chile	47	360	1
Colombia	-	20	-
Ecuador	2	41	-
Paraguay	-	5	-
Peru	-	41	-
Uruguay	-	15	-
Venezuela	1	3	-
NORTH-EAST AND SOUTH ASIA			
China	10	49	-
Hong Kong SAR	3	26	-
India	-	1	-
Japan	9	394	-
Korea (South)	8	41	-
SOUTH-EAST ASIA			
Malaysia	-	2	-
Philippines	-	21	-
Singapore	4	11	-
Taiwan	-	13	-
Thailand	-	3	-
Vietnam	-	3	-
AUSTRALIA AND PACIFIC			
Australia	132	633	-
New Zealand	-	10	-
TOTAL	803	19357	124

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.

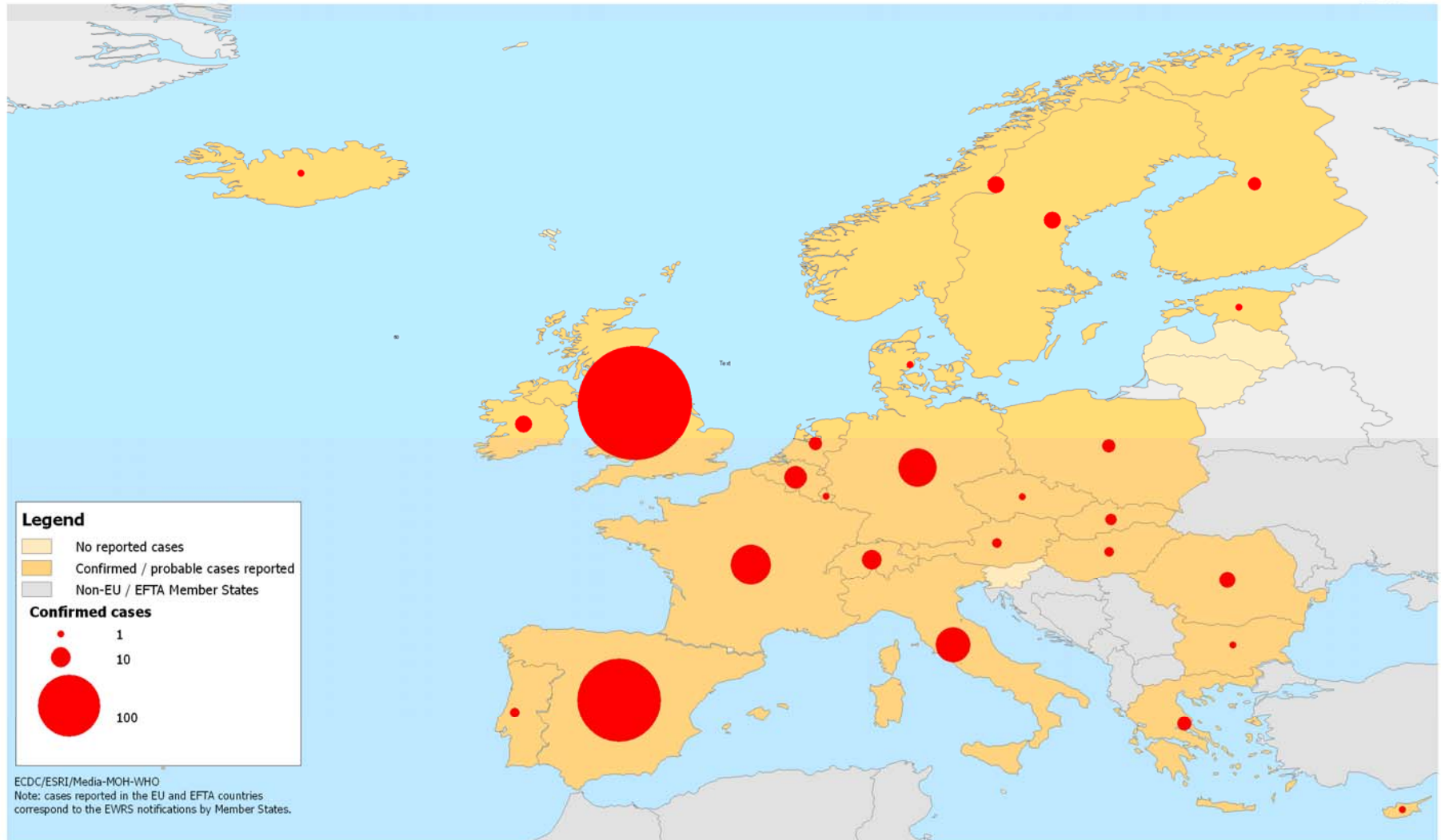
*Deaths are included in the cumulative number of confirmed cases

**Cases in the US include both probable and confirmed cases. Cases reported from the US include confirmed cases from Puerto Rico.

Figure 1: Distribution of confirmed cases of influenza A(H1N1) virus infection by date of reporting, EU and EFTA countries, 27 April to 03 June 2009, 17:00 CEST (n=711)



Reported cumulative number of confirmed cases of influenza A(H1N1) in EU and EFTA countries, as of 03 June 2009, 17:00 hours CEST



Reported cumulative number of confirmed cases of influenza A(H1N1) by country, as of 03 June 2009, 17:00 hours CEST

