

## ECDC DAILY UPDATE

### 2009 influenza A (H1N1) pandemic

31 December 2009  
14.00 CEST

## Main developments in the past 24 hours

- WHO review of current influenza status – pandemic activity is seen just to the East of the EU
- Pandemic influenza 2009 A(H1N1) is predominating over seasonal influenza in all of the Northern Hemisphere
- WHO's Director General states it is premature to consider the pandemic as completed
- First published report of transmission of antiviral resistant pandemic 2009 H1N1 virus in the community – Viet Nam July 2009 - remains an unusual event
- Fourth European Medicines Agency pandemic pharmacovigilance report
- A total of 1 923 fatal cases in Europe and EFTA countries and 11 047 in the rest of the world have been reported up to date.

This report is based on official information provided by national public health websites or through other official communication channels. Reported number of confirmed 2009 pandemic influenza A (H1N1) cases admitted to hospitals and intensive care, by country, as of 31 December 2009, 14.00 CEST in EU and EFTA countries are in Table 1. An update on the number of confirmed fatal cases for the world and Europe is presented in Table 2.

## Epidemiologic update

### Officially Reported Deaths in the EU

All 27 EU and 4 EFTA countries are reporting cases of pandemic (H1N1) 2009 influenza. A total of 1 923 deaths have been reported since April 2009 (Table 2). From week 41 to 51 the numbers of deaths each had shown a steady increase almost doubling every fortnight over six weeks. The fall observed in week 52 was to be expected as it represents official reports placed on national web-sites and a number of Member States have not been doing this in what was a holiday week. A similar phenomenon can be expected for the coming weeks. While the most deaths have to date been in Western Europe there are increasing numbers of deaths being reported from Central and Eastern Europe. The reported cumulative fatal pandemic (H1N1) cases in the world have now passed 10 000 cases (Table 2). However, because of lack of laboratory confirmation and underreporting among other factors, this is likely to be a gross underestimation of the true number of fatalities associated with the pandemic. Available updates on hospital admissions, per Member State, can be found in Table 1.

## Influenza activity in the world

### WHO Pandemic (H1N1) 2009 - update 81

WHO released its last Pandemic (H1N1) 2009 of the year - [update 81 on the 30<sup>th</sup> of December](#), describing the current influenza activity in the world as of 27<sup>th</sup> of December. Features of this update (not including the [EU/EEA countries](#) and [United States](#) where ECDC has reviewed the situation in the past week) include.

- The most active areas of pandemic influenza transmission globally currently are to the East of the European Union. Focal increases in rates of Influenza like illness or acute respiratory infection have taken place during recent weeks in Georgia, Montenegro, and Ukraine.
- In the Northern Africa region, limited available data indicates that active, high intensity transmission is occurring along the Mediterranean coast (Algeria, Tunisia, and Egypt).
- In Central Asia, limited data available suggest that influenza virus circulation remains active, but transmission may have recently peaked in some places.
- In West Asia, Israel, Iran, Iraq, Oman, and Afghanistan also appear to have passed their peak period of transmission within the past month, though both areas continue to have some active transmission and levels of respiratory disease activity have not yet returned to baseline levels.
- In East Asia, influenza transmission remains active but appears to be declining overall.
- In Southern Asia, influenza activity continues to be intense, particularly in northern India, Nepal, and Sri Lanka.
- In the tropical regions of Central and South America and the Caribbean, influenza transmission remains geographically widespread but overall disease activity has been declining or remains unchanged in most parts, except for focal increases in respiratory disease activity in a few countries.
- In the temperate regions of the southern hemisphere, sporadic cases of pandemic influenza continued to be reported without evidence of sustained community transmission.

For further information: [http://www.who.int/csr/don/2009\\_12\\_30/en/index.html](http://www.who.int/csr/don/2009_12_30/en/index.html)

## Predominance of influenza 2009 A(H1N1) over Seasonal Influenza A(H3N2) in the Northern Hemisphere

The U.S. Centers for Disease Control and Prevention (CDC) has updated its global map showing the extent of co-circulation in the Northern Hemisphere of the two current type A influenzas: 2009 A(H1N1) and Seasonal influenza A(H3N2) using data from the United States, Canada, Europe, China, and Japan as of late December. These data display how the 2009 pandemic influenza A (H1N1) continues to be the most predominantly strain across all the Northern continents. The highest proportion of seasonal influenza A (H3N2) viruses is observed in China where the influenza A viruses were still making up about 2.5% in week 50-51. It should be noted that there remain many countries, especially in the tropics where very little is known about the level circulation of these viruses.

Map available at: <http://www.cdc.gov/h1n1flu/updates/international/map.htm>

## Pandemic Press briefing by WHO's Director General

Margaret Chan, the WHO Director General held a press briefing on December 28<sup>th</sup> about the 2009 pandemic and this has been widely reported in the media. Her main messages were:

- It is premature to consider the pandemic as completed. The influenza activity remains high in certain parts of Europe and Asia. It is important to note that the recent peaking in areas such as N America & parts of Europe was early. The pandemic is a global and not regional event and we should expect to continue to see the peaks of influenza activity come and go and move to different areas of the world.
- The world has been fortunate that this pandemic has so far been moderate but there are still gaps in the health care systems around the world.
- The world is now better prepared to cope with future pandemic situations, and the work on pandemic preparedness over the last few years, much of it stimulated by 'bird flu' has significantly improved global readiness. The world is however not yet ready for a severe, hard-hitting pandemic.
- WHO continues to work with partners towards the delivery of pandemic vaccine to 95 developing countries The first shipments are expected towards the first week of January. WHO is investigating whether superfluous vaccines in some better resourced countries could be made available to developing countries.

Sources: BBC News Web-site December 30<sup>th</sup> [The head of the World Health Organisation \(WHO\) has warned the global swine flu pandemic is not yet over](#)

WHO Pandemic (H1N1) 2009 vaccine deployment update – [WHO 23 December 2009](#)

## First published report of transmission of antiviral resistant pandemic 2009 H1N1 virus in the community – Viet Nam July 2009 - remains an unusual event

Public health researchers in Viet Nam have recently reported convincing community transmission of oseltamivir-resistant 2009 pandemic Influenza A(H1N1) virus infection among healthy persons (1,2). Transmission of the resistant virus occurred in Vietnamese students who met and socialized during a prolonged train trip in July 2009. (1) Oseltamivir resistance was identified through the detection of the H275Y substitution and careful investigations did not detect further transmission. (1) To date this would seem to be an unusual event as though antiviral resistance testing being carried out in a number of countries have occasionally detected isolated cases of resistant pandemic 2009 H1N1 virus in community the numbers of these has not increased over time. [2,3] This is a very different situation from when the same resistance emerged in seasonal A(H1N1) when it was associated with some evolutionary advantage and rapidly came to predominate over non-resistant seasonal A(H1N1). [4] In most cases of oseltamivir resistance in the pandemic 2009 A(H1N1) resistance has developed under the pressure of prophylaxis or more often during treatment in health care settings in patients with known risk factors for the development of oseltamivir resistance, such as defective immunocompetence. These have resulted in clusters of resistant 2009 (H1N1) virus in Europe and the USA where person to person transmission has occurred. [5,6] However these have not so far extended to healthy people in the hospital or into the community and monitoring of antiviral resistance at community level is ongoing in Europe and so far only 1% oseltamivir resistance has been found. [7] Given the declining rates of transmission in Europe now is unlikely that a pandemic virus resistant to oseltamivir would become dominant in the near future. [7] However given the propensity of influenza viruses to develop antiviral resistance such monitoring and epidemiological investigations around cases of neuraminidase resistant pandemic viruses as was done in Viet Nam is of high importance. [1]

1. Mai LQ, Wertheim JFL, Duong TN, Van Doorn HR, Hien NT, Horby P. A community cluster of oseltamivir-resistant cases of 2009 H1N1 influenza. *New England Journal of Medicine* December 9, 2009 (10.1056/NEJMc0910448) [The New England journal of medicine. 2009.](#)

2. ECDC A cluster of oseltamivir resistant 2009 pandemic influenza A(H1N1) viruses was reported in Viet Nam. No evidence of further community transmission of resistant viruses [ECDC Public Health Development December 23<sup>rd</sup> 2009](#)

3. ECDC Oseltamivir-resistant pandemic (H1N1) 2009 influenza virus, [ECDC Public Health Development November 2009](#)

4. Meijer A, Lackenby A, Hungnes O, Lina B, van der Werf S, Schweiger B, et al. Oseltamivir-resistant influenza A (H1N1) virus, Europe, 2007–08 season. *Emerg Infect Dis.* 2009 April; <http://www.cdc.gov/eid/content/15/4/552.htm>

5. Centers for Disease control and Prevention Oseltamivir-resistant 2009 pandemic influenza A (H1N1) virus infection in two summer campers receiving prophylaxis--North Carolina, 2009. *MMWR.* 2009 Sep 11;58(35):969-72.

6 Health Protection Agency HPA statement on possible transmission of oseltamivir resistant pandemic influenza A(H1N1) [HPA November 20<sup>th</sup> 2009.](#)

7. ECDC Weekly Influenza surveillance Overview – [ECDC December 24<sup>th</sup> 2009.](#)

## Fourth European Medicines Agency pandemic pharmacovigilance report

The European Medicines Agency published its fourth pandemic pharmacovigilance weekly update on the agency webpage. The key messages were:

- For the most used antivirals (oseltamivir) the adverse reaction reports received from the are consistent with the safety profile described in the product information.
- At least 28 million persons including at least 218,000 pregnant women have been vaccinated to-date in Europe with one of the three centrally-authorised vaccines (Celvapan, Focetria, and Pandemrix) . The most frequent adverse reactions following immunisation (AEFIs) that have been reported are non-serious and as expected in the product information.
- Up to 13 December 2009, 13 cases of Guillain-Barré syndrome (GBS) and 1 case of Miller-Fischer syndrome (a variant of GBS) have been reported in relation with Celvapan, Focetria or Pandemrix. Given that more than 28 million persons have been vaccinated, 14 reported cases does not exceed the number of cases expected to naturally occur in the vaccinated population. Reports of other serious AEFIs have been received and are detailed in the [EMA report](#) however to date the panels that are

For further information : <http://www.emea.europa.eu/pdfs/influenza/84100309en.pdf>

Reports from national regulatory agencies are also available and will be the prime source of reports on other pandemic vaccines that are nationally authorised. A list of these Agencies is available on the [EMA web-site here](#).

**Table 1. Reported number of confirmed 2009 pandemic influenza A(H1N1) cases admitted to hospitals and intensive care, by country, as of 31 December 2009, 14.00 CEST in EU and EFTA countries.**

Country (date of report)	Number of cases currently hospitalised	Cumulative number of cases admitted in hospitals	Number of cases currently in intensive care	Cumulative number of cases admitted to intensive care
Austria (17.12.)	172	-	-	-
Belgium (24.12.)	-	-	-	-
Bulgaria (13.12)	-	-	-	-
Cyprus(23.11)	-	-	-	6
Czech Republic (23.12.)	-	-	-	-
Denmark (30.12.)	-	-	2	70
Estonia (29.12.)	-	-	-	-
Finland (23.12.)	11	-	3	-
France (29.12.)	-	-	209	985
Germany (22.12.)	-	-	-	-
Greece (30.12.)	-	-	-	-
Hungary (30.12.)	-	-	-	-
Iceland (10.12.)	3	180	1	20
Ireland (23.12.)	150	1027	10	87
Italy (24.12.)	-	832	-	452
Latvia (17.12.)	-	-	-	-
Liechtenstein (30.12.)	-	-	-	-
Lithuania (21.12.)	-	-	-	-
Luxembourg (27.12.)	-	-	0	0
Malta (04.09.)	-	46	-	1
Netherlands (28.12.)	31	2156	6	209
Norway (23.12.)	5	1310	4	170
Poland (22.12.)	-	-	-	-
Portugal (30.12.)	58	-	20	-
Romania (31.12.)	-	-	-	-
Slovakia (22.12.)	51	260	18	94
Slovenia (17.12.)	76	-	-	-
Spain (30.12.)	-	-	-	-
Sweden (30.12.)	-	-	-	-
Switzerland (30.12.)	7	430	-	77
United Kingdom* (24.12.)	454	-	103	-

Note: Data for the EU and EFTA countries correspond to the Ministry of Health or surveillance centre websites. New updates with changes in figures are highlighted in gray. (-) denotes no information readily available in official sources.

\* Data includes information for England only. Other cumulative hospitalisations are: Scotland (1439), Wales (437) and Northern Ireland (574).

**Table 2.** Reported number of new and cumulative confirmed fatal 2009 pandemic influenza A(H1N1) cases in EU and EFTA countries, as 31 December 2009, 14.00 CEST, and in the rest of the world by country, as of 31 December 2009, 14.00 CEST.

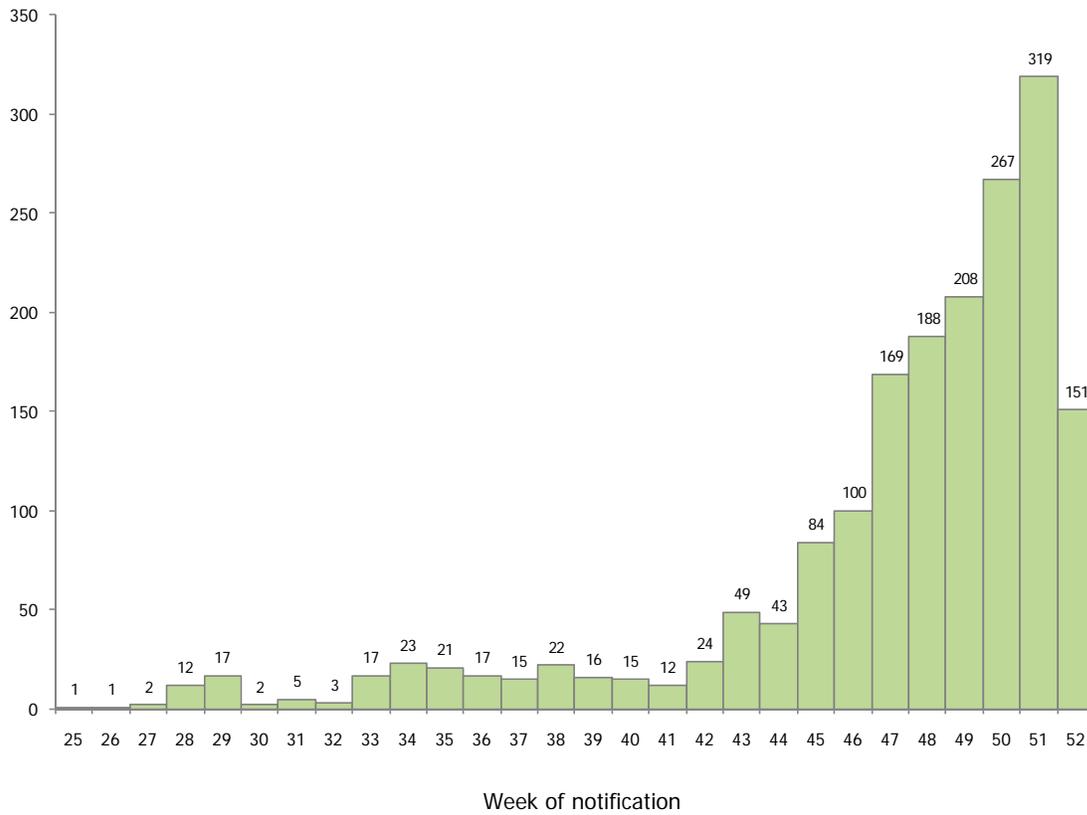
Country	Number of new fatal cases since previous national update	Cumulative number of fatal cases
<b>EU and EFTA countries</b>		
Austria	-	3
Belgium	-	17
Bulgaria	-	35
Cyprus	-	3
Czech Republic	-	56
Denmark	-	26
Estonia	-	10
Finland	-	36
France	7	230*
Germany	-	132
Greece	11	70
Hungary	7	52
Iceland	-	2
Ireland	-	22
Italy	-	188
Latvia	1	28
Lithuania	-	16
Luxembourg	-	3
Malta	-	3
Netherlands	-	53
Norway	-	29
Poland	-	122
Portugal	-	70
Romania	5	58
Slovakia	-	30
Slovenia	-	13
Spain	15	271
Sweden	-	25
Switzerland	3	12
United Kingdom	5	308
<b>Total</b>	<b>54</b>	<b>1923</b>
<b>Other European countries and central Asia</b>		
Albania	-	6
Armenia	-	3
Belarus	-	20
Bosnia and Herzegovina	-	7
Croatia	1	24
Former Yugoslav Republic of Macedonia	-	14
Georgia	-	10
Kosovo	-	14
Moldova	-	25
Montenegro	-	5
Russia	-	19
Serbia	3	55
Ukraine	-	202
<b>Total</b>	<b>4</b>	<b>404</b>
<b>Mediterranean and Middle-East</b>		
Algeria	-	42
Bahrain	-	7
Egypt	-	109
Iran	-	147
Iraq	2	42
Israel	10	81
Jordan	-	16
Kuwait	-	27
Lebanon	-	5
Libya	-	1

Country	Number of new fatal cases since previous national update	Cumulative number of fatal cases
Morocco	-	50
Occupied Palestinian Territory	-	23
Oman	-	30
Qatar	-	8
Saudi Arabia	-	97
Syria	-	110
Tunisia	-	18
Turkey	-	415
United Arab Emirates	-	6
Yemen	-	27
<b>Total</b>	<b>12</b>	<b>1261</b>
<b>Africa</b>		
Ghana	-	1
Madagascar	-	3
Mauritius	-	8
Mozambique	-	2
Namibia	-	1
Sao Tome & Principe	-	2
South Africa	-	93
Sudan	-	5
Tanzania	-	1
<b>Total</b>	<b>-</b>	<b>116</b>
<b>North America</b>		
Canada	9	410
Mexico	-	823
USA	-	2160
<b>Total</b>	<b>9</b>	<b>3393</b>
<b>Central America and Caribbean</b>		
Bahamas	-	4
Barbados	-	3
Cayman Islands	-	1
Costa Rica	-	47
Cuba	-	41
Dominican Republic	-	23
El Salvador	-	31
Guatemala	-	18
Honduras	-	16
Jamaica	-	7
Nicaragua	-	11
Panama	-	11
Saint Kitts and Nevis	-	2
Saint Lucia	-	1
Suriname	-	2
Trinidad-Tobago	-	5
<b>Total</b>	<b>-</b>	<b>223</b>
<b>South America</b>		
Argentina	-	617
Bolivia	-	58
Brazil	-	1632
Chile	-	150
Colombia	-	196
Ecuador	-	96
Paraguay	-	52
Peru	3	208
Uruguay	-	33
Venezuela	-	121
<b>Total</b>	<b>3</b>	<b>3163</b>
<b>North-East and South Asia</b>		
Afghanistan	-	17
Bangladesh	-	6
China (Mainland)	-	509

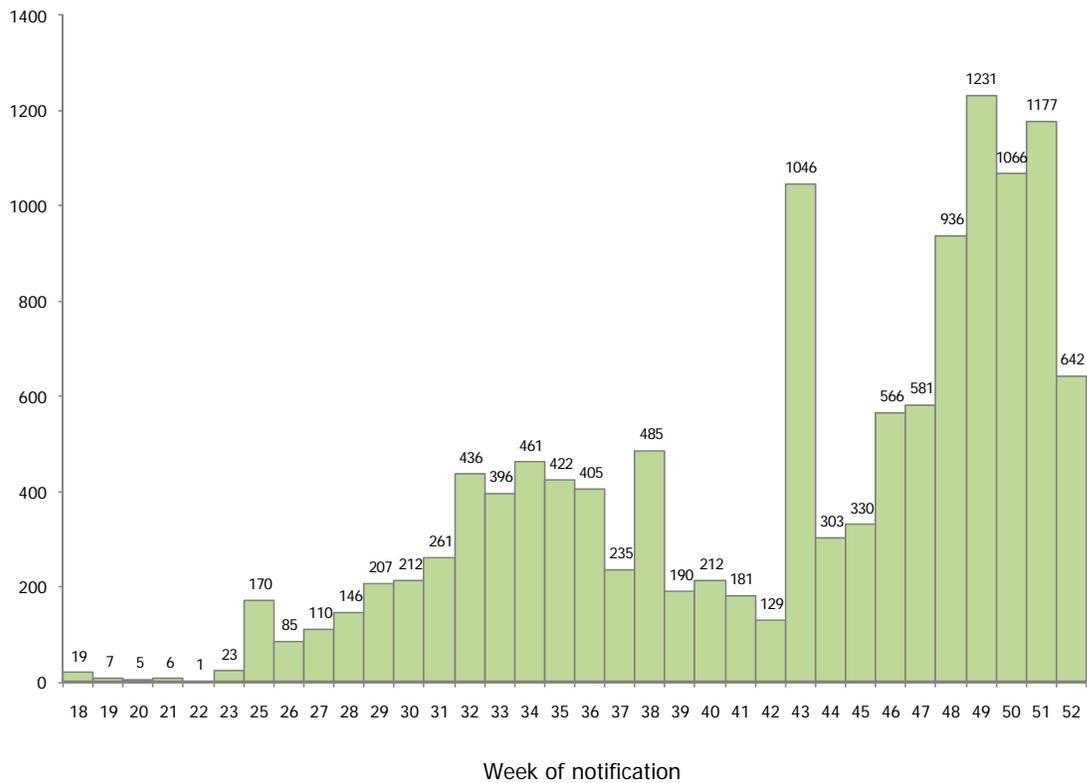
Country	Number of new fatal cases since previous national update	Cumulative number of fatal cases
Hong Kong SAR China	1	52
India	21	919
Japan	-	107
Macao SAR China	-	2
Maldives	-	1
Mongolia	-	26
Nepal	-	2
Pakistan	-	1
South Korea	-	170
Sri Lanka	-	35
Taiwan	-	35
<b>Total</b>	<b>22</b>	<b>1882</b>
<b>South-East Asia</b>		
Brunei Darussalam	-	1
Cambodia	-	6
Indonesia	-	10
Laos Peoples Democratic Republic	-	1
Malaysia	-	77
Philippines	-	30
Singapore	-	19
Thailand	-	191
Vietnam	-	53
<b>Total</b>	<b>-</b>	<b>388</b>
<b>Australia and Pacific</b>		
Australia	-	191
Cook Islands	-	1
Marshall Islands	-	1
New Zealand	-	20
Samoa	-	2
Solomon Islands	-	1
Tonga	-	1
<b>Total</b>	<b>-</b>	<b>217</b>
<b>TOTAL</b>	<b>104</b>	<b>12970</b>

\* Deaths reported from France include 1 in Guyana, 9 in New Caledonia, 7 in the French Polynesia, 7 in La Réunion, 1 in Martinique, 2 in Mayotte, 5 in Guadeloupe and 198 in mainland France.

**Figure 1. Number of confirmed deaths among 2009 pandemic influenza A(H1N1) cases by week of notification in EU and EFTA countries**

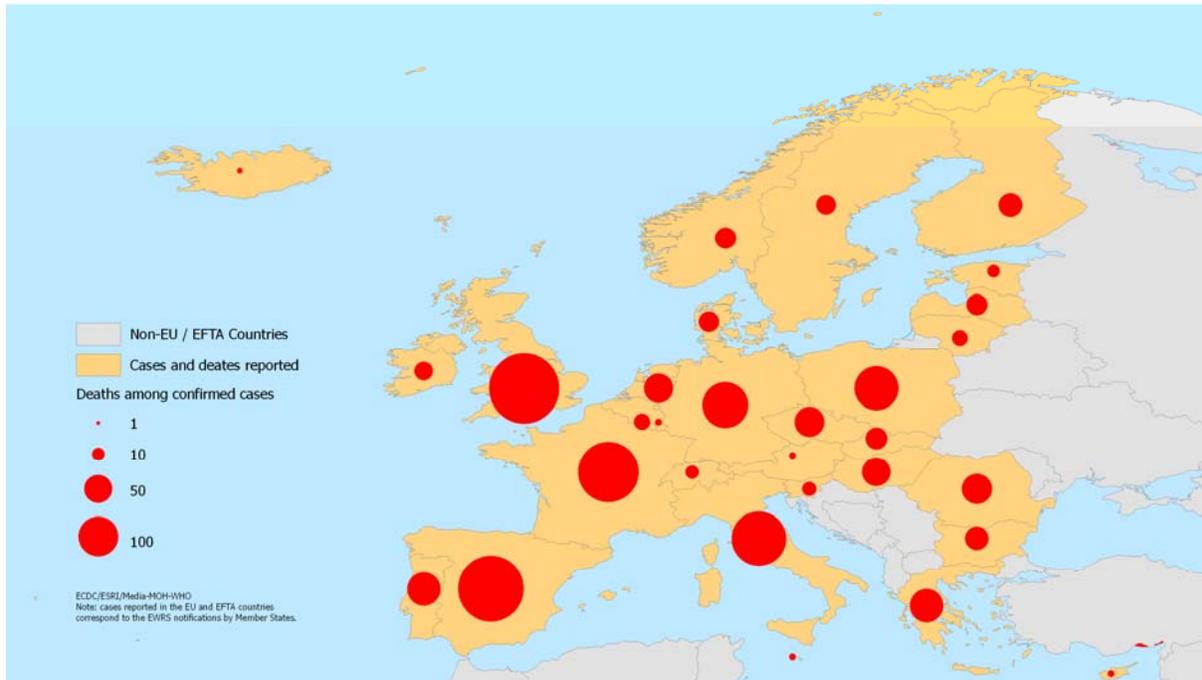


**Figure 2. Number of confirmed deaths among 2009 pandemic influenza A(H1N1) 2009 influenza cases by week of notification in the rest of the world\*.**



\* The apparent increase in the number of deaths in week 43 is due to the aggregate reporting of fatal cases from Brazil from weeks 37 to 40 and to our batch report of US fatal cases since 1 August 2009.

**Figure 3.** Reported cumulative number of confirmed fatal cases of 2009 pandemic influenza A(H1N1) in EU and EFTA countries, as of 31 December 2009, 14.00 CEST



**Figure 4.** Reported cumulative number of confirmed fatal cases of 2009 pandemic influenza A(H1N1) and country status, by country, as of 31 December 2009, 14.00 CEST

