

# Update on H1N1 Virus

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## Local update

Up to 1st February, 1,685 persons have been tested for H1N1 and 53% came positive to H1 and 10% came positive to influenza A. Our peak during our second wave occurred during week 52. The rate of influenza-like symptoms has been decreasing in the community since mid-January.

5 deaths have occurred since the first diagnosed case on the 1st of July 2009 and around 2,388 persons were dispensed Tamiflu® from government stocks. So far 63,512 persons in Malta have taken the H1N1 vaccine.

## Worldwide update

Worldwide more than 208 countries have reported laboratory confirmed cases of pandemic influenza H1N1 2009, including around 14,000 deaths. The most intense areas of pandemic influenza virus transmission currently are in parts of North Africa, South Asia, and East and South-Eastern Europe.

The current H1N1 influenza virus outbreak remains moderate and its effects are closer to those of 1957 and 1968 according to the World Health Organization. It is still too soon to say what will happen once the southern hemisphere enters Winter and whether the virus will become more infectious. For many countries there was an increased burden on health care services especially ITU beds, hospital beds, A&E and GP services.

## Epidemiological data

Influenza H1N1 (2009) is likely to remain the predominant flu virus for 2010 flu season and there is a risk that the genetic composition of the virus could 'drift' causing more severe illness.

Experts are saying that the adjuvanted H1N1 (2009) vaccine (Pandemrix®) gives a high level of immunity to individuals, which is particularly important for those with a poorer immune response. It may also give longer lasting immunity and is likely to protect against 'drifted' strains.

Most infections have been characterised by mild self-limiting illness and the mortality from H1N1 influenza has been lower than in previous pandemics, however, the disease has disproportionately affected young people, and this is where most complications have occurred, particularly where pre-existing chronic illness exists.

Data collected so far show that

- Deaths from H1N1 flu amongst younger adults have been more than 30 times higher than deaths amongst the same age group in the 2008 flu season;
- Rates of hospitalisation have been particularly high amongst the under fives;
- Some people have been so seriously ill that they required Extracorporeal Membrane Oxygenation.

## Centres for Disease Control and Prevention (CDC) Data

Analysis on data collected so far in North America shows that H1N1 virus had a greater impact on children and young adults than typical seasonal influenza. They concluded that:

### For children 0-17 year

- out of every 100 children, 21 fell ill with influenza (case attack rate)
- the population mortality rate was 14.9 deaths per million
- the hospital rate was 4.4 out of every 1000 ill child and
- the inpatient mortality rate was 15 deaths out of every 1000 children hospitalised

### For adults 18-64 years

- out of every 100 adult, 14 fell ill with influenza (case attack rate)
- the population mortality rate was 38.9 deaths per million
- the hospital rate was 4.5 out of every 1000 ill adult
- the inpatient mortality rate was 62 deaths out of every 1000 adult hospitalised

### For persons over 65 years of age

- out of every 100 elderly, 10 fell ill with influenza (case attack rate)
- the population mortality rate was 32.9 deaths per million elderly
- the hospital rate was 5.2 out of every 1000 ill elderly patients
- the inpatient mortality rate was 61 deaths out of every 1000 elderly patients hospitalised

The conclusion was that the pandemic was deadly for elderly persons and least for children with regards to case fatality rate but more likely to cause children to fall ill and least the elders with regards to case attack rate. Elderly were hit hardest and children least with regards to mortality rate and also hospital rate. Treatment was more successful for hospitalised children than elderly and adults who were more likely to die.

## Role of Interleukin as possible cause for death in some H1N1 patients

Canadian and Spanish researchers have found high levels of interleukin 17 in the blood of severe H1N1 patients, and low levels in patients with the mild form of the disease. Interleukin 17 is part of the regulation of white blood cells which fight infection and disease. In certain circumstances, the molecule becomes 'out of control', leading to inflammation and autoimmune diseases and this so far is the first potential immunological clue which could explain why some patients developed severe pneumonia and got severely ill or died as compared to others exposed to the same virus.