

## Pandemic H1N1 2009, Seasonal Influenza and Avian Influenza

### 1. Situation in Sri Lanka

Sri Lanka is experiencing a second wave of pandemic influenza A/H1N1. According to the situation report of the Ministry of Healthcare and Nutrition, Government of Sri Lanka, 29 December 2010, there have been 400 cases of Pandemic Influenza A/H1N1 and 23 deaths since 20 September 2010. The worst affected are children below ten years of age and adults in the age group 21-30 years.

(<http://www.epid.gov.lk/pdf/Swine%20Flu/Situation%20Update/Situation%20Update%2029%20Dec%202010.pdf>).

Most cases were reported from the Western Province, in which the peak may now be over. The Government of Sri Lanka and WHO in country are currently engaged in measures to curb any potential spread to other provinces.

### 2. Has it remained confined to the country?

When the pandemic occurred in 2009, this strain of influenza A/H1N1 spread all over the world. This strain is therefore now found all over the world.

### 3. How is it different from 'normal' or 'seasonal' influenza?

Many different strains of Influenza viruses (A and B) can cause the illness in human beings. Influenza or 'flu' is a respiratory illness that can be mild to severe, and sometimes cause deaths from severe pneumonia or progressive respiratory failure. The pandemic influenza A/H1N1 virus, a new sub-type of Influenza virus A, is a new virus of swine origin. How and when this new virus emerged is not entirely clear but it started to spread and cause disease in human population first in North America in March-April, 2009. Usually influenza viruses are, by and large, species specific e.g. pig influenza viruses will remain confined to the pig population, avian strains to birds, and so on. Rarely, these viruses undergo some changes in their genetic material and gain the ability to infect another species. Though of swine origin, pandemic Influenza A/H1N1 has a genetic composition that enabled it to infect and then spread efficiently among human beings. It spread rapidly all over the world, leading to the declaration of a pandemic by WHO in April 2009. Rapid spread and the ability to cause severe disease and deaths even in young adults with robust health are the characteristic epidemiological features of a pandemic influenza. Elderly people are affected less often because of some immunity induced by related strains in the distant past. In contrast, the 'seasonal' influenza is caused by a strain that is closely related to the strains circulating in human population during the previous years. The seasonal strains show only minor changes in their genetic make up from the previously circulating strains. The end of the pandemic was declared by WHO in August 2010 because of the rapid slowing of the waves in most countries of the world, but in certain pockets of some Member Countries this strain remains the dominant strain amongst the local population.

The pandemic Influenza A/H1N1 strain shows symptoms similar to those of seasonal influenza i.e. cough or cold, sore throat, often (but not always) fever, muscle ache, fatigue, vomiting and diarrhoea (more

common in children). In most people, with reasonable home care, these symptoms subside in a few days but people 'at risk' for severe disease (please see below) develop progressive disease with pneumonia and respiratory failure.

#### 4. Who is at risk for severe disease?

Those at greater risk include:

- Pregnant women
- Children especially those below the age of 5
- Those with certain chronic medical conditions e.g. respiratory conditions like asthma; diabetes, cardiovascular disease, chronic kidney or liver disease, etc.
- Elderly people (those above the age of 65), even though their likelihood of getting infected by the Pandemic virus is lower than that of young people, once infected their illness is likely to get worse.

#### 5. How is it spread?

The main route of transmission is similar to seasonal influenza – through droplets expelled when speaking, sneezing or coughing. The virus particles in the droplets may be inhaled directly by an individual or the droplets may reside on the environmental surface, tables, chair, door handles, water taps, or any other surface from which individuals can pick up the virus by touching these surfaces with their hands and inhaling later.

#### 6. How can pandemic influenza A/H1N1 be treated?

Antiviral medicine is most effective if given early in clinical course. General health promotion with good nutrition and personal hygiene are important in minimising the chances of infection. Ample rest, good attention to hydration and nutrition during the illness are considered important in reducing the disease severity. Early reporting to a care provider, especially by the 'at-risk' population (see above) for early diagnosis and treatment with antiviral is an important step in reducing the disease severity and mortality.

#### 7. What precautions can be taken to prevent Pandemic Influenza A/H1N1?

One can reduce the risk of being infected by pandemic H1N1 by taking the following precautions:

- Wash hands thoroughly and regularly with soap and water
- Keep distance from people who have a cold
- Reduce time in crowded settings
- Avoid touching nose, mouth and eyes
- Covering your coughs or sneezes or by coughing or sneezing into a sleeve
- Following good health habits e.g. eating nutritious food, exercising regularly
- Getting oneself vaccinated for pandemic influenza

8. Is it safe to travel to a country which has an epidemic of pandemic influenza A/H1N1?

Since the strain of the pandemic influenza virus is now all over the world, there is no scientific evidence to show that travel to a particular country will increase the risk of being infected. However, travellers should follow the same precautionary measures advised to reduce the risk of being infected. If the traveller returns with a cough and cold, he/she should report to a medical facility immediately.

9. How is this influenza epidemic related to bird flu concerns?

The current epidemic in Sri Lanka is the second wave of the influenza A/H1N1 that affected the world in 2009-2010. As mentioned earlier, this strain emerged in North America and originated from pigs, and spread rapidly among human beings. This strain of the virus, though originated from pigs, also has some bits of genetic material from human and bird influenza viruses.

Bird flu is a separate disease. As in human beings, pigs, and other species, birds too are affected by flu, caused by a large number of influenza viruses that are specific to birds. The majority of these can only infect birds. Of the hundreds of strains of avian influenza A viruses, only four are known to have caused human infections: H5N1, H7N3, H7N7 and H9N2. Of these, only one has caused severe illness: highly pathogenic H5N1.

In the past few years, there have been many cases of avian influenza or 'bird flu' particularly in poultry due to highly pathogenic H5N1, and human beings have been infected mainly through close contact with poultry. Those human beings who were infected have usually been severely ill, and this virus can often be fatal. However, since it is a bird influenza virus, it still does not have the capacity to spread easily from one human being to another – therefore human to human transmission has been very limited.

Animal/bird influenza viruses can only start spreading easily in human beings when the genetic make-up of the virus changes through two processes: 'reassortment', (when genetic material is exchanged between human and avian/animal viruses when the animal or human being is co-infected with both the human and animal/avian virus. This happened with the pandemic influenza A/H1N1 virus); and adaptive mutation, which is a gradual process through which the virus changes and mutates over time to adapt to the human being.

So far, avian influenza does not have the capacity to spread rapidly among human beings. If it develops that capacity to spread, then there is a threat of a pandemic due to H5N1 i.e. bird flu or avian influenza. This has not happened yet, but because of the risk, avian influenza is under close surveillance in most countries of the world.

To minimise the risk of bird flu, one is advised to wash hands thoroughly with soap and water; eat well cooked poultry and eggs; wash utensils used for raw poultry thoroughly with soap and water; minimise close contact with birds.

