

Pandemic H1N1 2009
Global, Regional and National Situational Update and Pandemic Response Strategies

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An outbreak of influenza-like illness in Veracruz, Mexico was reported to the World Health Organisation (WHO) on 12 April 2009.

Two new influenza (H1N1) virus infections were reported from 15 to 17 April in two southern California counties in the United States (US). On 23 April a novel influenza (H1N1) infection was confirmed in several patients in Mexico. WHO declared a public health event of international concern (PHEIC) on 24 April 2009.

Subsequently on 27 April, WHO declared a pandemic phase 4 event due to sustained community transmission in Mexico. After this, on 29 April WHO declared a pandemic phase 5 event (two countries affected) and on 11 June, it declared a pandemic phase 6 (viral spread to two WHO regions).

Within nine weeks, all WHO regions reported confirmed cases of pandemic (H1N1) 2009. On 16 July 2007, WHO reported that at this point further spread of the pandemic, within affected countries and other additional countries was considered inevitable.

As at 23 August 2009 the virus has spread to a total of 182 countries with 246, 221 confirmed cases and 2,958 deaths. There were 36,303 cases reported from 18 May to 27 July in the territories that comprise WHO's Western Pacific region.

The situation in Malaysia till 10 September is as follows:

Laboratory confirmed cases	10, 870	
Deaths	73	(0.7%)
Recovered	10,797	(99.3%)

The pandemic H1N1 2009 virus is distinct from current circulating seasonal influenza virus. The characteristic symptoms of 268 hospitalized novel H1N1 patients in the Unites States are fever, cough, shortness of breath, fatigue/weakness, chills, myalgias, rhinorrhea, sore throat, headache, vomiting, wheezing and diarrhoea.

The majority of the cases have uncomplicated influenza illness that resolves even without antiviral treatment. There are more gastrointestinal complaints (emesis, diarrhoea) when compared to seasonal flu. Up to 10% of confirmed cases are hospitalized; there is higher risk in elderly adults and those with co-morbidities. The majority of deaths are caused by severe viral pneumonia. Between 50 to 80% of severe cases have underlying conditions i.e.

- Pregnancy;
- Asthma or other lung disorders;
- Cardiovascular disorders;

- Diabetes;
- Immunosuppression;
- Neurological disorders;
- Obesity.

Of 651 deaths reported worldwide, 52% have no details available. 3.2 % are without co-morbidity and 4.8 % have co-morbidities. It has been noticed that pandemic (H1N1) 2009 and seasonal viruses have co-circulated at varying levels over time in many countries.

The reported characteristics of pandemic H1N1 2009 is that it has explosive outbreaks in semi-enclosed communities with those from ages 5 years to 45 years most commonly affected. Hospitalization rates and case fatalities in young adults are higher than that of seasonal influenza. The potential risk groups for severe illness are pregnant woman, those with asthma, obesity, chronic heart and lung disease, cancer and those who are immunosuppressed. There is also the possibility of co-circulation of seasonal and pandemic viruses and possible re-assortment. The severity of the pandemic is expected to be higher in developing countries.

The National Influenza Pandemic Preparedness Plan (NIPP) of the Ministry of health (MOH) commenced in 2003. It was prepared by the national Pandemic Planning Committee which consisted of multidisciplinary inter-agencies and departmental experts. It was officially launched on 9th January 2006 by the Minister of Health. Comprehensive documents regarding the NIPP are available on the MOH website including reference documents for simulation exercise. The pandemic response strategies are to implement rapid containment measures and to sustain essential social functions.

There are two distinct phases in the control of the H1N1 influenza. It commences with the containment phase where most of the confirmed cases are imported ones. The aim at this phase is to delay the spread of the disease in the community. During the second phase i.e. mitigation phase, which we are at now, there is sustained community spread and new cases have no defined epidemiological links to existing cases. The aim of control strategies in this phase is to reduce morbidity and mortality from the disease, slow the spread of the disease and to minimise disruption of essential services.

When does transition from the containment phase to the mitigation phase takes place? It is when there is evidence of beginning of widespread or community transmission. In this phase there are a number of unlinked cases in the community with no known epidemiological link to any known cases.

The activities during the containment phase is geared towards the stopping or delaying of the spread of the virus by detecting cases and taking vigorous action such as contact tracing, treatment and/or quarantine of contacts. During the mitigation stage, the paramount efforts are initiated to slow the spread of the virus in the community and to minimize transmission to the vulnerable in the population, to optimize and emphasis healthcare for those who need it most and to minimize social disruption and other negative consequences.

The activities during this stage include improving event based surveillance of the spread of the disease, keeping a lookout for clustering, establishing positively the extend of the spread of the disease and monitoring the changes in the natural history of the disease including the severity of the disease. In so far as investigation is concerned, random sampling of confirmation of the disease is carried out in laboratories with capabilities in detecting virus characteristics and more importantly, the emergence of specific drugs to combat this menace.

The control measures undertaken during the mitigation stage is to enhance public health interventions at individual and household levels matched by personal protective measures (including hand and respiratory hygiene), isolation of ill cases, quarantine of contacts, infection and prevention control in the home setting and use of masks in the community settings.

At the societal level, the measures include social measures, like suspending classes and child care programmes, adjusting or changing work patterns, restricting of public or mass gatherings and domestic travel advisories and restrictions.

Under the mitigation phase, triaging at the health facilities are intensified. Severe cases are admitted while mild cases are advised to be observed at home. Infection control is simultaneously intensified.

The goal of the mitigation phase is to reduce the severity and transmission of the disease. The Pandemic Influenza (H1N1) Technical Committee decided to initiate mitigation strategies and this was notified in the Director General's circular dated 10 July 2009.

Evidence had shown that 99% of cases are mild and most recover without even treatment. Of course there is a possibility of those in the high risk group dying. 80% those who die have co-morbid conditions and are in the high risk group.

The role of medical practitioners is to detect cases early and to treat them effectively. The Ministry of Health had drawn up guidelines where immediate antiviral treatment is indicated for 3 groups;-

- Those in the high risk group as mentioned above;
- Those with fever of 38 degree Celsius for more than 48 hours and
- Severe cases where indications are present (using professional judgement) even within the 48 hours time span.

Patients in these three groups and those with complications are to be referred to government hospitals. The health authorities have to be informed by treating practitioners the number of suspected cases treated. MOH will ensure the availability of antivirals at government clinics and hospitals. However it has to be emphasised here that the rapid test to detect the virus has been found to have only a limited role.

The following categories of patients are considered vulnerable to severe outcomes:-

- Those suffering from chronic respiratory conditions including asthma, COPD, obstructive sleep apnoea;

- Pregnant women especially in 2nd and 3rd trimester;
- Morbid obesity cases;
- Those suffering from other predisposing conditions such as chronic cardiac disease(not simple hypertension) and chronic illnesses including diabetes mellitus, renal failure, hemoglobinopathies and immunosuppression (including cancer, HIV/AIDS, chemotherapy , long term steroids);
- Adults more than 65 years of age especially those with other chronic diseases; and
- Children under the age of 5 years especially those below the age of 2 years.

The clinical assessment tool for moderate to severe influenza include:-

- a. Respiratory impairment with any of the following:-
 - Tachypnoea , respiratory rate more than 24;
 - Inability to complete sentence in one breath;
 - Use of accessory muscles for respiration, subclavicular recession;
 - Oxygen saturation < 92 % on pulse oximetry;
 - Decreased effort tolerance since onset of condition;
 - Respiratory exhaustion;
 - Chest pain.
- b. Evidence of clinical dehydration or clinical shock, systolic BP < 90mmHg and/or diastolic BP < 60mmHg, capillary refill time > 2 secs and reduced skin turgor.
- c. Altered conscious level (especially in extremes of age), confusion, striking agitation or seizures.
- d. Other clinical concerns, rapidly progressive (especially high fever > 3 days) or serious atypical illness, severe and persistent vomiting.

What is the next step for Malaysia? Based on the WHO forecast the worse is yet to come. About 20% to 30 % of the population is expected to be affected with the flu, with 2% to 9% of the population requiring hospitalisation and a death rate of 0.1% to 0.5%. As such the unequivocal indulgence of all parties involved in the healthcare services, especially medical practitioners, is required to contain this disaster.

As far as MOH is concerned there will be beefing up of resources , increases in the number of healthcare providers in containing the spread and updated and accurate information regarding the disease will be provided to all those involved. An appeal is made for greater collaboration and co-operation of all stakeholders. An increased awareness campaign and education of the general public by both the public and private sector is to be implemented with emphasis on personal hygiene and cleanliness. In this respect, community participation and self responsibility is paramount and responsible media coverage is necessary to give a balanced view of the current situation of the disease to the general public, so as not panic them. A transparent risk communication mechanism will be made available to the public.

In establishing priorities for the use of pandemic vaccines we are still at the very early stage of the pandemic. More information is needed on the situation in the southern hemisphere, in developing countries and from specific on-going studies to lay specific and definitive guidelines on the usage of pandemic vaccines.

However under the second wave plan by WHO for the Pandemic H1N1 2009, tropical countries need to prepare for an increasing number of cases of H1N1 which is the dominant virus strain in most parts of the world and large populations are anticipated to succumb to this infection. Drug resistance need to be monitored. One has to take note that the pattern of illness is not the same as seasonal influenza. Delay in diagnosis leads to severe respiratory failure, especially in the vulnerable groups, causing a higher risk of hospitalisation and eventual death. There may be a possibility of co-infection with HIV.

It is envisaged that with all these additional information provided, medical practitioners will view the gravity of the situation in the right perspective and provide all the assistance to the MOH to contain, stall and prevent the spread of this disease. Failure on our part will prove to be devastating, not only to the health status of the population but also to the economy of the country which we can ill afford given the prevailing worldwide economic crisis.