EDITORIAL

ARE WE PREPARED FOR INFLUENZA PANDEMIC?

The United Nations has been warning about a bird flu pandemic for about one year now. These warnings were merely 'suggestions' a few months back, but recently with the mutation reports of the virus these warnings have also 'mutated' to 'alarms'. These alarms have led to panic stockpiling of antiviral drugs by affluent countries, United Nations and black marketers.

The World Health Organization (WHO) has reported an outbreak of Avian Influenza in birds in several countries in Asia.[1,2] Avian influenza is a contagious viral infection with a potential to affect all species of birds, and rare transfer to humans. Avian influenza virus has 15 known types that infect wild bird populations (mainly water birds). In wild birds this infection is without symptoms, therefore the infected birds carry on with their normal life. The bird feces and contaminated water or dust spreads avian influenza to domestic ducks and to the other poultry. In domestic birds the disease is severe. This very contagious virus then spreads rapidly in poultry flocks killing whole population of domestic birds in some areas.

There are several types of avian influenza. The strain that causes the greatest number of deaths is called Highly Pathogenic Avian Influenza (HPAI). The HPAI strain involved in the current outbreak is called H5N1. It was first recognised in 1997 in Hong Kong. At that time millions of chickens were slaughtered after the virus was found to cause disease in people exposed to infected birds (18 people were affected with six deaths). Fortunately, the virus was not able to spread from person to person, and the outbreak was halted in Hong Kong by slaughter of the chickens.

In the present wave of avian influenza WHO update (23rd May, 2005) puts cumulative number of cases to 53 confirmed human cases since 16th December 2004, with 21 deaths. WHO has also revised the onset of the outbreak to 26th December 2003. A total of 97 confirmed human cases have been reported to WHO since this date, with 53 deaths. (WHO 19th May 2005). WHO investigators were unable to find evidence of human-to-human transmission, but as the virus can mutate at any time therefore now it is just matter of time to see a mutant transmissible by humans. The Director-General of the WHO has made special reference to the threat of avian influenza and the importance of pandemic preparedness at the opening of the 58th World Health Assembly in Geneva (WHO 16th May, 2005).

The likely impact of a pandemic depends upon infectivity of the virus, its attack rates in different age groups and the severity of illness it causes. Consistent features of pandemics include sudden increases in morbidity and mortality, with rapid spread around the world. Past experiences tell that pandemics usually spread to all parts of the globe within less than a year and affect more than a quarter of the total population. Probably the speed of spread will be very fast this time due to faster means of travel. There is a tendency for pandemics to recur in second and sometimes third waves, which may begin simultaneously in different parts of the world.

Ever since the records have been kept the Spanish influenza pandemic of 1918-1919 caused by the H1N1 subtype was unprecedented in terms of loss of human life. The illness was characterised by rapid onset and rapid progression to respiratory failure. An estimated 20-40 million people died worldwide. The maximum deaths were in young and healthy persons of 15 -35 years. 'Asian influenza' of 1957-1958 was caused by a milder virus H2N2 and there was less loss as the world was better prepared. In 1957 a new H2N2 subtype was reported in Singapore. It had spread throughout the world by May 1958. First wave was concentrated in school children, the second in elderly. In July 1968 a new subtype, H3N2, emerged in Hong Kong, and caused a pandemic that was milder than previous one, probably due to similarity between H3N2 virus and the H2N2 virus.

It is a general consensus that the virus will spread through the migratory birds. Theoretically birds flying from Siberia will carry the disease to the Caspian and Black Seas. These regions and Balkans will then become a gateway to central Europe. Other routes of migration of different species that pass through Iran, Iraq, Georgia, Ukraine and some Mediterranean countries will lead to out breaks there. India, Pakistan, Bangladesh and other countries, which currently seem to be uninfected, are also considered to be "at risk" due to large number of domestic ducks along the major migratory routes. These ducks freely intermingle with the migratory birds in the ponds and then return home that they share with humans and other animals.

It is very important that health pundits from across the globe sit together and devise a strategy to check the virus at all possible routes of spread. A pandemic can be defeated only by global

coordination in mass education, information sharing and rapid reaction.

Pandemic cannot be defeated by waiting in glass houses. It has to be "nipped in the bud". As the bud is in poorer countries the richer countries, if they are serious at all, must help eradicate the bird flu in the countries where it is raising its head every now and then. It has to be dealt in the same style as the world is dealing with terrorism in form of preemptive attacks.

Many countries are on the defensive only, but some countries have tried offensive in form of massive poultry slaughter at the cost of millions of dollars.[4] In my personnel opinion based on a study of temporal and spatial spread of bird flu, these offensive approaches checked the almost sure pandemic in 2003 and 2004. I am of the view that although defensive measures in form of planning, vaccine development and anti viral stock piling are important yet destroying poultry in the effected area is one of the best measures to check the pandemic. The United Nations and the richer countries must support the poor economies for this slaughtering of poultry from time to time at the slightest hint of presence of avian flu. I predict that the pandemic will start when some poor poultry owner will decide to not to report disease in his birds for the fear of economic loss.

The WHO has recently called urgent meetings to discuss developments in a potential vaccine and use of antiviral agents. To date no vaccine has been able to satisfy clinical trials.

A number of countries including the United Kingdom, Germany[5] and the Netherlands have prepared their pandemic plans but in my assessment the best plan available is the plan of Australia[6]. This plan has clearly identified the problem and has devised a plan in the form of Border control, measures to increase social distance, restricting mass gatherings, closure of schools, the National Medicines Stockpile (NMS), identifying priority groups, activation and deployment of the NMS, health service delivery, pandemic vaccination, information for overseas Australians, mass education and international collaboration. This plan has beautifully described management in different phases of the pandemic. Australian government has allocated $133.6 million to protect Australians from potential outbreaks of human pandemic influenza, and from the entry of bird flu to Australia. This amount has helped Australia in building up of world's largest stockpile of antiviral treatments for influenza, protective masks and personal protective equipment. The Australian Government also has a binding agreement with two of the largest vaccine manufacturers in the world to provide guaranteed supplies of any newly developed vaccine against pandemic influenza. An interesting measure adapted by Australians for improved surveillance capability to detect cases of influenza at Australia's international borders include thermal imaging cameras that will operate in an emergency at major airports to detect passengers who may be infected with a potentially dangerous virus.

Most of the world's population is living in the poorer countries. These countries cannot afford planning for pandemic management but they will have definitive role in containing the pandemic. I suggest the following:

- WHO must provide a ready made country specific plan to all the poor countries.
- WHO representatives in all the countries must keep a close watch on implementation of these plans to avoid any negligence.
- WHO must stock antiviral medicines for the poor countries
- The United Nations with the help of richer countries and the World Bank must plan economic support plan for farmers whose birds are culled, as this is the best method for containing the pandemic.

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Dr. Ahmed Badar, Publication Editor, Journal of Ayub Medical College, Abbottabad. Pakistan.
Email: badar@ayubmed.edu.pk