

Headline **A bug by any other name**
Date **21. May 2009**
Media Title **The Sun**
Section **National**
Circulation **174179**
Readership **171000**

Language **ENGLISH**
Page No **8,9**
Article Size **657** cm2
Frequency **Daily**
Color **Full Color**
AdValue **11686.26**



A bug by any other name

NEWLY EMERGING AND RE-EMERGING INFECTIONS HAVE ALWAYS BEEN A CAUSE FOR CONCERN AMONG THE SCIENTIFIC COMMUNITY AND GOVERNMENTS. THE OUTBREAK OF INFLUENZA A (H1N1) HAS RAISED THAT CONCERN ONE NOTCH HIGHER. UNIVERSITY MALAYA MEDICAL CENTRE'S INFECTIOUS DISEASE EXPERT, PROF DR ADEEBA KAMRULZAMAN SPEAKS TO **JOSEPH MASILAMANY** ABOUT THE NEW INFLUENZA STRAIN

LOOKING back at the history of newly emerging and re-emerging infections since the turn of the 19th century, how do you read the pattern of emerging infections and the outbreak of influenza A (H1N1) in

the context of disease morbidity and the widescale impact of its socio-pathology?

It is worthwhile remembering that despite all the medical advances that we have, infectious diseases are responsible for 15 million (26%) of 57 million annual deaths in a global population of 6.2 billion.

Let's take a look at the major new emerging and re-emerging infections that we in Malaysia have had in the last three decades. We have first, of course, the AIDS epidemic that has resulted in 3.3 million people living with HIV in 2007 and another 2.7 million infections in 2007 alone.

In Malaysia, we have had more than 80,000 people infected. The morbidity and mortality and the socio-economic impact of this disease is of course very large and well-documented.

The next major disease to affect our shores and nearby countries was the hand, foot and mouth disease in 1997. The epidemic in Sarawak and to a lesser extent in Kuala Lumpur affected more than 2,600 children which resulted in 26 deaths.

Next was the Nipah encephalitis affecting 265 people but with a mortality rate of about 40%.

And then there was SARS. Although Malaysia was spared this epidemic, the morbidity and mortality of this disease was large; 26 countries, 8,098 cases, 774 deaths.

And finally, we have dengue. Last year, Malaysia recorded 49,335 dengue cases and 112 dengue deaths and this year we already have had 41 deaths from dengue.

It is difficult to know what the approximate number of cases for influenza is in Malaysia in a given year. In a surveillance study by the National Influenza Centre, Institute of Medical Research, from 2002 to 2006 of a total of 5,463 specimens received from patients presenting with influenza like illness, 220 (4%) were found to be positive for influenza B virus.

In the US, each year seasonal flu accounts for up to 300,000 hospitalisations, and is associated with 20,000-40,000 deaths. In comparison, the total number of deaths following influenza A (H1N1) infections is low so far.

The A (H1N1) strain is said to carry the genetic make-up of the human, bird and swine viruses. In the early stage of the outbreak it was purely referred to as the "swine flu". How did this misnomer come about? Can you explain the suggested name, A (H1N1), in the context of its science?

Initial genetic testing suggests that the virus was an influenza A (H1N1) swine flu virus. Influenza A viruses include avian, swine, equine and canine influenza viruses, as well as the human

influenza A viruses. They can cause disease in birds, swine, horses, ferrets, dogs, cats, mink, seals, whales and other species.

Avian influenza viruses mainly infect birds, but some strains can also infect and/or cause disease in mammals, including humans (such as H5N1), without further spreading among them.

"Swine influenza" (also called "hog flu" and "pig flu") in *senso stricto* is an animal disease, caused by a specific porcine virus, namely Swine Influenza Virus (SIV).

SIV is very contagious, mainly affecting pigs, but can sporadically cause disease in turkeys and humans, without further spreading in the affected populations ("dead-end" hosts).

The virus is present in all pig-producing countries.

However, further genetic testing revealed that the involved virus contains gene segments from four different influenza types: North American swine, Eurasian swine, North American avian and human type (permitting human to human transmission).

Has Malaysia registered any case of the swine flu since it was first isolated in 1950?

The swine flu is a very rare cause of human infections. The rate of known cases in the US is 1-2 per year. I don't think we have previously recorded cases of swine flu in Malaysia.

Currently, in the absence of an outbreak of the disease and mortality among pig and bird population worldwide - and the fact that the outbreak of the A (H1N1) is through human to human transmission, there seems to be a bizarre element of mystery considering this mode of transmission. Is there a probability that the A (H1N1) could have remained dormant in a human host over an unknown period?

The fact that this virus is a reassortment of the swine, avian and human flu viruses and has acquired the ability to be transmitted from human to human is what has raised the concern over this new virus. It therefore fulfils the prerequisites for the start of a pandemic.

First, a novel virus must emerge to which the general population will have no or little immunity. Second, the new virus must be able to replicate in humans and cause disease.

Third, the new virus must be efficiently transmitted from one human to another. It is likely that this strain has remained dormant in humans until now.

Human to human transmission of viruses originating from animal hosts has been the greatest fear of medical doctors and virologists. Is the A (H1N1)

transmission mode from human to human, a realisation of that fear?

Yes. This outbreak has raised such a concern.

Mortality from A (H1N1) infections has largely been reported in Mexico only, with very low mortality reported in infected cases in other parts of the world. In the context of disease socio-pathology, deaths largely occurring among infected Mexicans is phenomenal. What is your take on this and what are the contributory factors that may have caused deaths among a select group of infected cases and that too in a specific geographic location?

The information that we have now is still incomplete. How many of the earlier cases that were reported by Mexico were really due to the A (H1N1) for instance.

Could some of the deaths be due to other infections like bacterial pneumonia?

Could there have been a co-infection between influenza and other infections? That is what we need to know.

If the virus develops into a worldwide pandemic, do you think the world will see a decolouration similar to the 1918-1919 Spanish flu epidemic?

I don't think so. First, the Spanish flu occurred in the setting of World War I. It was established that most of the deaths were in fact due to bacterial pneumonia. You have to remember that in 1918 penicillin had only just been discovered a few years earlier. In this day and age treatment of secondary

bacterial infections is much more sophisticated.

What are the chances of the A (H1N1) virus being nothing more than a benign transient variant that may soon be a spent force - or the probability of it becoming a more virulent form that could impact populations?

There are three possible scenarios. In the first scenario, the outbreak stabilises and fizzles out over the next several weeks and that's the last we hear of it.

In the second, the outbreak progresses to a full-blown pandemic, of a severity unknown at this time, and involving most of the entire world over the next four to six months. Although this is possible, this seems unlikely. The good news is that the northern hemisphere is going into spring now.

The third scenario is that the outbreak stabilises and subsides over the next several weeks, since it's so late in the influenza season, re-emerging again in the late summer and autumn, possibly with even more vigour, to cause a pandemic. It should be remembered that the extent of the epidemic is going to be most felt in temperate regions.

What is your view on the controversial suggestion by Indonesian Health Minister Dr Siti Fadilah Supari and other groups that the A (H1N1) is a man-made pathogen concocted and spread by Western governments to boost sales of pharmaceutical products?

It would seem to me to be very unlikely.



The swine flu is a very rare cause of human infections. The rate of known cases in the US is 1-2 per year. I don't think we have previously recorded cases of swine flu in Malaysia."